

## Errata

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### HP References in this Manual

This manual may contain references to HP or Hewlett-Packard. Please note that Hewlett-Packard's former test and measurement, semiconductor products and chemical analysis businesses are now part of Agilent Technologies. We have made no changes to this manual copy. The HP XXXX referred to in this document is now the Agilent XXXX. For example, model number HP8648A is now model number Agilent 8648A.

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# **Agilent Technologies**

## **E6392B GSM MS Test Set**

### ***Programmer's Guide***

Firmware revision B.03.00 and above



**Agilent Technologies**

**Agilent Part No. E6392-90042**

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## Manual Printing History

The manual printing and part number indicate its current edition. The printing date changes when a new edition is printed. (Minor corrections and updates that are incorporated at reprint do not cause the date to change.) The manual part number changes when extensive technical changes are incorporated.

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---

### **NOTE:**

Agilent E6392B complies with INSTALLATION CATEGORY II and POLLUTION DEGREE 2 in IEC1010-1. Agilent E6392B is an INDOOR USE product.

LEDs in the Agilent E6392B are Class 1 in accordance with IEC 825-1.

CLASS 1 LED PRODUCT

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### **Ground the Instrument**

To avoid electric shock hazard, the instrument chassis and cabinet must be connected to a safety earth ground by the supplied power cable with earth blade.

### **DO NOT Operate In An Explosive Atmosphere**

Do not operate the instrument in the presence of flammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

### **Keep Away From Live Circuits**

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**Warnings**, such as the example below, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed.

---

**WARNING:**

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**Dangerous voltages, capable of causing death, are present in this instrument. Use extreme caution when handling, testing, and adjusting this instrument.**

### Safety Symbols

General definitions of safety symbols used on equipment or in manuals are listed below.



Instruction manual symbol: the product is marked with this symbol when it is necessary for the user to refer to the instruction manual.



Alternating current.



Direct current.



On (Supply).



Off (Supply).



In position of push-button switch.



Out position of push-button switch.

---

**WARNING:**

---

**This WARNING sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury or death to personnel.**

---

**CAUTION:**

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**This CAUTION sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.**

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**NOTE:**

---

**NOTE** denotes important information. It calls attention to a procedure, practice, condition or the like, which is essential to highlight.

## In this Book

Throughout this guide the term "Test Set" is used to denote the Agilent E6392B.

This guide describes how to program the Agilent E6392B GSM MS Test Set. It is recommended to refer to the User's Guide when the detailed operational information is required in addition to this guide.

This guide contains the following information on the Test Set:

### **Chapter 1, "Preparing for Use"**

This chapter describes how to set up an automated test system with the Test Set.

### **Chapter 2, "Programming Command Guidelines"**

This chapter describes the rules and guidelines for using the remote programming commands via the RS-232C serial port interface.

### **Chapter 3, "Programming Command Reference"**

This chapter provides a brief description of the syntax for each programming command.

### **Chapter 4, "Programming Command Cross Reference"**

This chapter provides cross reference tables for the softkeys, test parameters, and other test items, and their corresponding syntax.

### **Chapter 5, "Example Programs"**

This chapter includes basic test programs for using the Test Set to test mobile phones.

### **Appendix A, "Syntax Diagrams,"**

This appendix shows a syntax diagram for each subsystem or command group.

### **Appendix B, "Command Difference between E6392A & E6392B,"**

This appendix contains a table to show the command differences between the Agilent E6392A and E6392B.





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# 1 Preparing for Use

This chapter is a quick overview of how to set up an automated test system with the Agilent E6392B GSM MS Test Set.

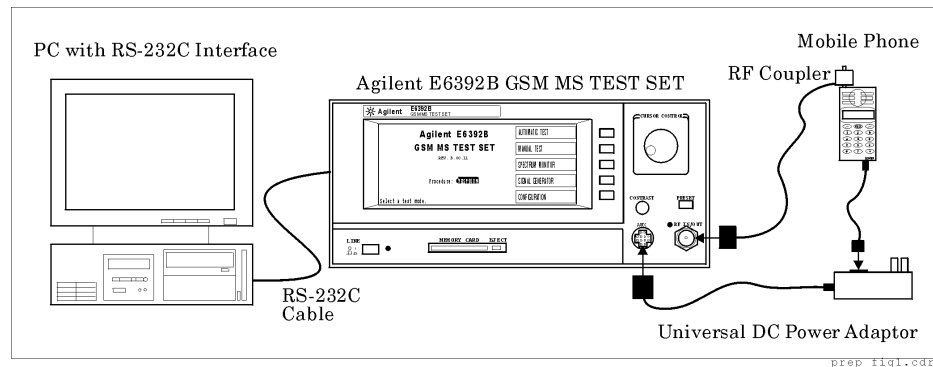
## Equipment for Automated Test System

The following equipment is required to construct an automated test system:

- The Agilent E6392B GSM MS Test Set (called the Test Set hereafter)
- A system controller with the RS-232C interface
- An RS-232C cable
- An RF cable to connect RF signals from/to the mobile phone under test, or the Antenna Coupler to connect RF signals from/to the mobile phone, or the Shield Box (Agilent N4678A) to couple RF signals from/to the mobile phone
- The Universal DC Power Adapter and an appropriate cable to connect between the AUX connector of the Test Set and the mobile phone to supply the dc power to the mobile phone from the Test Set (optional)
- Printer and an appropriate cable (optional)

A typical setup for an automated test system looks like the illustration in [Figure 1-1](#) below:

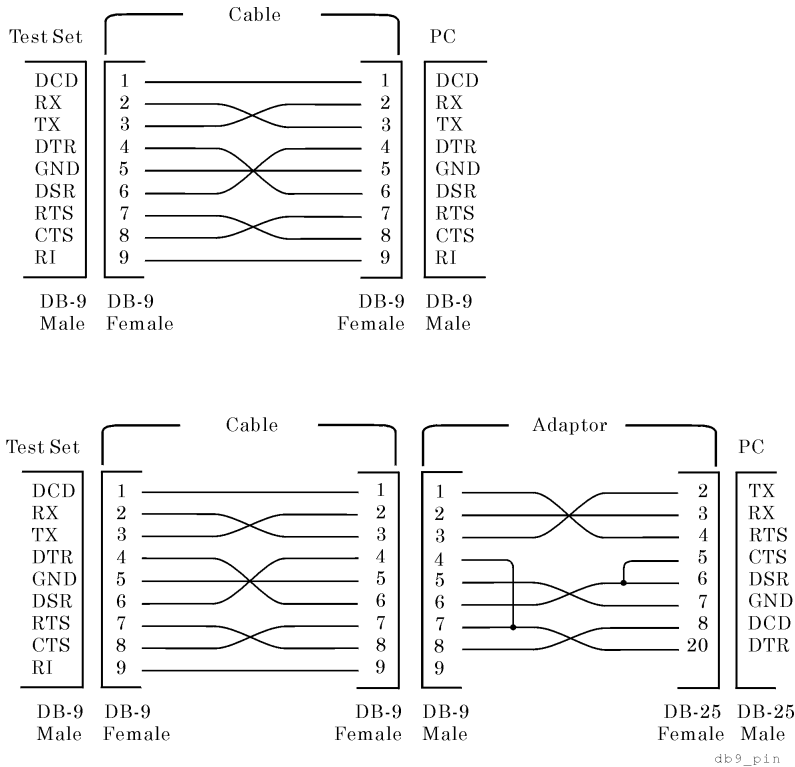
**Figure 1-1 Typical Setup for Automated Test System**



## Connecting to Controller

- A DB-9 male connector is provided with the Test Set as the serial interface to a controller.
- If your PC controller has a DB-9 male connector, use the 9-pin female to 9-pin female RS-232C cable between the PC and the Test Set. This cable must have the pin assignments shown in the upper illustration of [Figure 1-2](#).
  - If your PC controller has a DB-25 male connector, insert the 9-pin male to 25-pin female Adapter between the RS-232C cable and the 25-pin male connector. This adapter must have the pin assignments shown in the lower diagram of [Figure 1-2](#).
- Agilent Technologies 34398A RS-232 Cable Kit contains a 9-pin female to 9-pin female cable and 9-pin male to 25-pin female adapter.

**Figure 1-2 RS-232C Cable and Adapter Pin Assignments**







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## 2 Programming Command Guidelines

This chapter contains a brief overview of the programming commands.

## Getting Started with Programming Commands

### Understanding Common Terms

The following terms are used throughout the remainder of this chapter.

Controller	A controller is any computer used to communicate with an instrument. A controller can be a personal computer (PC), a minicomputer, or a plug-in card in a card cage. Some intelligent instruments can also function as controllers.
Program Message	A program message is a combination of one or more properly formatted commands. Program messages always go from a controller to an instrument. Program messages tell the instrument how to make measurements and output signals.
Response Message	A response message is a collection of data in specific formats. Response messages always go from an instrument to a controller. Response messages tell the controller about the internal state of the instrument and about measured values.
Command	A command is an instruction. You combine commands to form messages that control instruments. In general, a command consists of mnemonics (keywords), parameters, and punctuation.
Query	A query is a special type of command. Queries instruct the instrument to make response data available to the controller. Query mnemonics always end with a question mark, ?.

## Standard Notation

This section uses several forms of notation that have specific meaning:

**Command Mnemonics** Many commands have both a long and a short form and you must use either one or the other (a combination of the two is not allowed). Consider the :FREQuency command, for example. The short form is :FREQ and the long form is :FREQUENCY. This notation type is a shorthand to document both the long and short form of commands. Programming commands are not case sensitive, so :fREquEnCy is just as valid as :FREQUENCY, but :FREQ and :FREQUENCY are the only valid forms of the :FREQuency command.

**Angle Brackets** Angle brackets indicate that the word or words enclosed represent something other than themselves. For example, <new line> represents the ASCII character with the decimal value 10. Words in angle brackets have much more rigidly defined meaning than words shown in ordinary text. For example, this section uses the word “message” to talk about messages generally. But the bracketed words <program message> indicate a precisely defined element of the commands. If you need them, you can find the exact definitions of words such as <program message> in a syntax diagram.

## Query and Event Commands

You can query any value that you can set. For example, the :RESults:RAMP:MARKer:POSition <num> commands imply that the :RESults:RAMP:MARKer:POSition? query commands also exist. If you see a command ending with a question mark, it is a query-only command. Some commands are events and cannot be queried. An event has no corresponding setting if it causes something to happen inside the instrument at a particular instant.

## Command Syntax

Following the heading for each programming command entry is a syntax statement showing the proper syntax for the command. An example syntax statement is shown here:

CONFigure:PRINter HPPCL | ESCP

Syntax statements read from left to right. In this example, the :PRINter portion of the statement immediately follows the :CONFigure portion of the statement with no separating space. A separating space is legal only between the command and its argument. In this example, the portion following the :PRINter portion of the statement is the argument. Additional conventions used in the syntax statements are defined as follows:

- ::= means “is defined as.”
- | (vertical bar) indicates a choice of one element from a list. For example, <A>|<B> indicates that either A or B can be chosen, but not both.
- [] (square brackets) indicate that the enclosed items are optional.
- <> (angle brackets) enclose variable items that represent user choices (parameters) to be entered.
- Upper-case lettering indicates that the upper-case portion of the command is the minimum required for the command. For example, in the command :FREQuency, :FREQ is the minimum requirement.
- Lower-case lettering indicates that the lower-case portion of the command is optional; it can be either included with the upper-case portion of the command or omitted. For example, in the command :FREQuency, either :FREQ or :FREQUENCY is correct.
- ? after a subsystem command indicates that the command is a query. Most commands accept this command when it is entered immediately after the command name. The returned information, <value>, varies in format according to the type of the field.
- ;: (a semicolon and a colon) are used to separate two or more root level command statements on the same line.  
“:TEST:MAN:COND:PCL <num>;:TEST:MAN:SENS:LEV <num>”
- ; (a semicolon) can also be used to condense command words on one line if the commands are equal, or of decreasing hierarchy under the keyword.  
“:TEST:MAN:COND:PCL <num>;AMPL <num>”

## Units of Measure

- Units for settings:

It is allowed to send numeric data with or without its multiplier and suffix as follows. (Suffixes may be omitted if they are the default settings.)

HZ (Hz; default setting), KHZ (kHz), MHZ and MAHZ (MHz)

A (A; default), MA (mA)

PCT (%; default)

DB (dB; default)

DBM (dBm; default)

V (V; default)

For example, both of the following commands can set the same value:

TEST:AUTO:BCCH 896200000

TEST:AUTO:BCCH 896.2MHZ

- Units for measurements:

The query responses for any parameters have only numerical or alphanumeric data depending on the fields. For example, “TEST:AUTO:BCCH?” only returns “896200000”.

## Overview of the RS-232C Serial Interface

Serial interface programming techniques are similar to most general I/O applications. Refer to the programming language documentation for more information on how to initiate the card and verify the status.

Due to the asynchronous nature of serial I/O operations, special care must be exercised to ensure that data is not lost by sending to another device before the device is ready to receive. Modem line handshaking can be used to help solve this problem.

### Settings for the Serial Interface

Refer to the documentation on your computer, programming language, and I/O card to configure the serial bus.

The serial port is not programmable but manually set. The default settings at preset and other choices are as follows:

Table 2-1 Serial Port Configuration

Item	Default	Other Choices
Baud Rate:	9600	<fixed>
Data Length:	8	7
Stop Bits:	1	1.5, 2
Parity:	None	Odd, Even
Xcontrol:	None	Xon/Xoff
Terminator:	CR+LF	CR, LF

Use the following procedure to set the serial port configuration.

**Step 1.** Press the CONFIGURATION softkey in the Initial screen to obtain the CONFIGURATION screen:

CONFIGURATION

2001/09/23 12:34

Serial Port

Baud Rate: 9600

Data Length: 8

Stop Bits: 1

Parity: None

Xcontrol: None

Terminator: CR+LF

Printer: HP PCL

Beeper: On

Panel Key: Unlock

13MHz Reference: INT

Option: 002 040

Attenuation: On

GSM900: RF In 2.4dB RF Out 2.5dB

E-GSM: 1.7dB 2.0dB

DCS1800: 0.6dB 1.0dB

PCS1900: 0.2dB 0.5dB

Network Config: 123 12 1 12345 2

MCC MNC NCC LAC BS\_PA

Date/Time: 2001 09 23 12 34

YYYY MM DD/HH MM

Firmware: B.03.00

Update: Off

Print

Print All

File Management

Test Setup

Return

config\_config\_bspsa

**Step 2.** Confirm that the Serial Port part is correctly set.

## Character Format Parameters

To define the character format, you must know the requirements of the peripheral device for the following parameters:

- Data Length: Eight data bits are used for each character, excluding start, stop, and parity bits.
- Stop Bits: One stop bit is included with each character.
- Parity: Parity is disabled (absent) for each character.

## Modem Line Handshaking

To use modem line handshaking for data transfer, set the Request-to-Send (RTS) and Clear-to-Send (CTS) modem lines to active state on your controller.

Setting Xcontrol to Xon/Xoff allows the Test Set to stop data transmission from the controller when the buffer of the Test Set is full and then start it again when the Test Set is ready.

## Data Transfer Errors

The serial interface can generate several types of errors when certain conditions are encountered while receiving data from the peripheral device. Errors can be generated by any of the following conditions:

- Parity error. The parity bit on an incoming character does not match the parity expected by the receiver. This condition is most commonly caused by line noise.
- Framing error. Start and stop bits do not match the timing expectations of the receiver. This can occur when line noise causes the receiver to miss the start bit or obscures the stop bits.
- Overrun error. Incoming data buffer overrun caused a loss of one or more data characters. This is usually caused when data is received by the interface, but no ENTER statement has been activated to input the information.
- Break received. A BREAK was sent to the interface by the peripheral device. The computer program must be able to properly interpret the meaning of a break and take appropriate action.



## Programming Guidelines

When you are going to make a test program, follow the following guidelines.

- The program flow should be same as the flow of the front panel operation of the Test Set. That is, before setting parameters, performing tests, or querying the test results, display the corresponding screen using the DISPLAY subsystem commands.

For example, when you want to execute the BS Call for MANUAL TEST using the “TESTs:MANual:MEASure:BSCall” command, send the “DISPlay:MANual:SYNChronous:STBY” command to display the MANUAL TEST: Stand-by screen before sending that command.

- The number of query commands and the number of the corresponding enter commands should be same. To avoid mismatching of the numbers of them, enter the value to a computer just after the query commands have been sent.

For example, when you want to enter the TCH channel and frequency values on MANUAL TEST using HP BASIC, make a test program as follows:

```
OUTPUT Serial_port;"DISP:MAN:SYNC:STBY"
```

```
OUTPUT Serial_port;"TEST:MAN:TCH:CHAN?"
```

```
ENTER Serial_port;a
```

```
OUTPUT Serial_port;"TEST:MAN:TCH:FREQ?"
```

```
ENTER Serial_port;b
```

- To enter the measurement results, wait until the measurement ends. Using the “\*STB?” command to know the measurement status, monitor the bit 0, Measurement Data Ready Bit, and bit 1, Measuring Status Bit.
- To perform measurements with AUTOMATIC TEST or the MANUAL TEST, wait until the test flow proceeds to the step which the measurement can be performed. To monitor the test flow steps executed, use the “TESTs:AUTO:MEASure:SIGNaling:STATe?” command for AUTOMATIC TEST and the “TESTs:MANual:MEASure:SIGNaling:STATe?” command for MANUAL TEST.

## Using the Status Registers

The status system comprises multiple registers which are arranged in a hierarchical order. The lower-priority status registers propagate their data to the higher-priority registers in the data structures by means of summary bits. The status byte register is at the top of the hierarchy and contains the general status information for the instrument's events and conditions. All other individual registers are used to determine the specific events or conditions.

You can determine the state of certain instrument hardware and firmware events and conditions by programming the status register system.

Individual status registers can be set and queried using the commands in the IEEE common commands reference. A status register is actually composed of five physical registers: a condition register, two transition registers, an event enable register and an event register. However, a "standard event status register" is composed of an event enable register and an event register.

## Why Would You Use the Status Registers?

In general, your program often needs to be able to detect and manage error conditions or changes in instrument status. To detect a change using the polling method, the program must repeatedly read the registers to monitor a condition as follows:

1. Determine which register contains the bit that reports the condition.
2. Send the unique query that reads that register.
3. Examine the bit to see if the condition has changed.

### Using the Status Registers

Most monitoring of the instrument conditions is done at the highest level using the IEEE common commands indicated below for the Test Set. Refer to ["IEEE Common Commands" on page 34](#) for more information about common commands.

- \*CLS (clear status) clears the status byte by emptying the error queue and clearing all the event registers.
- \*ESE, \*ESE? (event status enable) sets and queries the bits in the enable register part of the standard event status register.
- \*ESR? (event status register) queries and clears the event register part of the standard event status register.
- \*OPC, \*OPC? (operation complete) sets or queries the standard event status register to monitor the completion of all commands. The query stops any new commands from being processed until the current processing is complete, then returns a '1'.

- \*STB? (status byte) queries the value of the status byte register without erasing its contents.

### Setting and Querying the Registers

Each bit in a register is represented by a numerical value based on its location. See [Figure 2-1](#) below. This number is sent with the command, to enable a particular bit. If you want to enable more than one bit, you would send the sum of all the bits that you are interested in.

**Figure 2-1** Status Register Bit Values

Decimal Value	128	64	32	16	8	4	2	1
Bit Number	7	6	5	4	3	2	1	0

2\_bitval.cdr

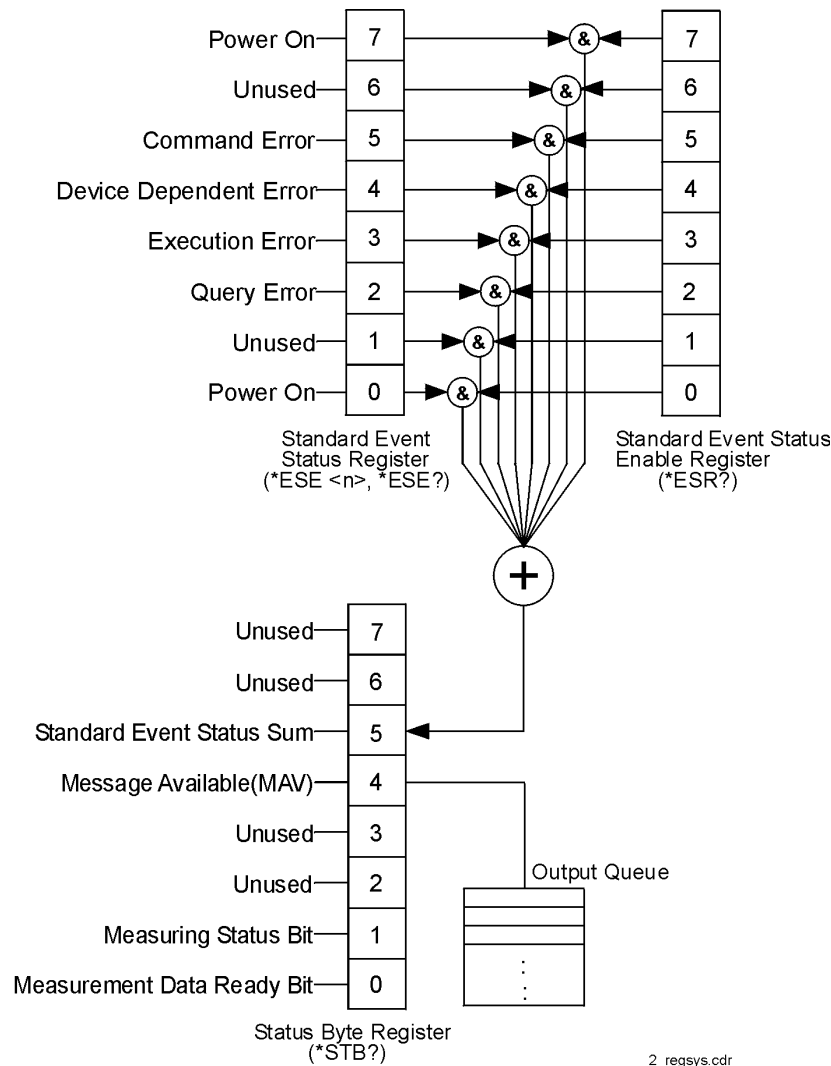
For example, to enable bit 0 and bit 6 of standard event status register, you would send the command \*ESE 65 (= 1 + 64).

The results of a query are evaluated in a similar way. If the command \*STB? returns a decimal value of 140 (= 128 + 8 + 4), then the bit 7, bit 3 and bit 2 are true.

## Status Register System

Figure 2-2 shows all of the instrument status registers of the Test Set and their hierarchy incorporated with the Test Set.

Figure 2-2 Overall Status Byte Register System

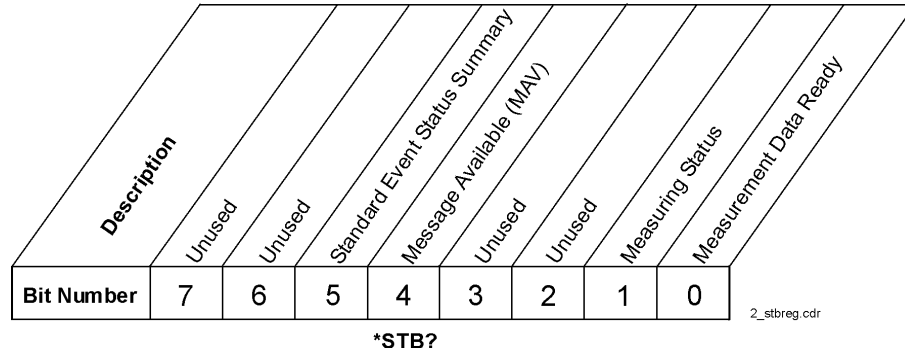


Each of these status registers are explained in detail in the following sections.

## Status Byte Register

The status byte register of the Test Set uses the bit 0 “Measurement Data Ready Bit”, bit 1 “Measuring Status Bit”, bit 4 “Message Available” and bit 5 “Standard Event Status Summary Bit” as shown in [Figure 2-3](#):

**Figure 2-3 Status Byte Register**



The status byte register contains the following bits:

**Table 2-2 Bits in the Status Byte Register**

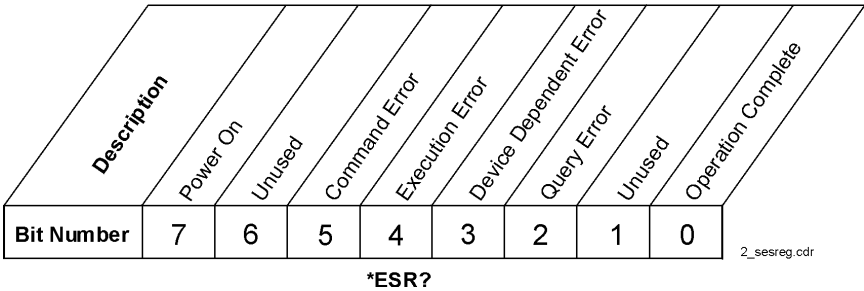
Bit	Description
0	If the instrument has data ready in the output queue, this bit is set to 1. After responding to a query this bit becomes 0.
1	While the instrument is in the measuring state, this bit is set to 1. At the completion of one measurement, this bit is set to 0.
2, 3	These bits are always set to 0.
4	If the instrument has message data ready in the output queue, this bit is set to 1. There are no lower status groups that provide input to this bit.
5	If the standard event summary bit has been set, this bit is set to 1. The standard event status register can then be read to determine the specific event that caused this bit to be set.
6, 7	These bits are always set to 0.

To query the status byte register, send the command \*STB?. The response will be the decimal sum of the bits which are set to 1. For example, if the bit 5 and bit 4 are set to 1, the decimal sum of these two bits is 32 plus 16 (see [Figure 2-1 on page 26](#)). So the decimal value 48 is returned.

Standard Event Status Register

The standard event status register for the Test Set is used to determine the specific event that set bit 5 in the status byte register as follows:

Figure 2-4 Standard Event Status Register



The standard event status register contains the following bits:

Table 2-3 Bits in the Standard Event Status Register

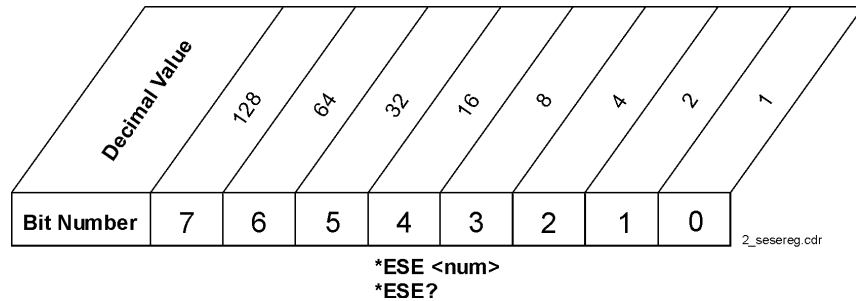
Bit	Description
0	If all pending operations were completed following execution of the *OPC command, this bit is set to 1.
1	This bit is always set to 0.
2	If a query error has occurred, this bit is set to 1.
3	If a device dependent error has occurred, this bit is set to 1. Device dependent errors have error numbers from –399 to –300 and 1 to 32767.
4	If an execution error has occurred, this bit is set to 1. Execution errors have error numbers from –299 to –200.
5	If a command error has occurred, this bit is set to 1. Command errors have error numbers from –199 to –100.
6	This bit is always set to 0.
7	If the instrument has been turned off and then on, this bit is set to 1.

To query the standard event status register, send the command \*ESR?. The response will be the decimal sum of the bits which are set to 1. For example, if the bit 7 and bit 3 are set to 1, the decimal sum of these two bits is 128 plus 8 (see [Figure 2-1 on page 26](#)). So the decimal value 136 is returned.

## Standard Event Status Enable Register

In addition to the standard event status register, the standard event status group also contains a standard event status enable register as follows:

**Figure 2-5 Standard Event Status Enable Register**



This register lets you choose which bits in the standard event status register will set the summary bit (bit 5 of the status byte register) to 1. Send the `*ESE <num>` command where `<num>` is the sum of the decimal values of the bits you want to enable. For example, to enable bit 7 and bit 6 so that whenever either of those bits is set to 1, the standard event status summary bit of the status byte register will be set to 1 by sending the command `*ESE 192 (= 128 + 64)` (see [Figure 2-1 on page 26](#)). The command `*ESE?` returns the decimal value of the sum of the bits previously enabled with the `*ESE <num>` command.

## Error Messages

The following table shows the error messages for the Test Set.

**Table 2-4 Error Messages**

Error No.	Description
0	No error
–100	Other command error has occurred.
–103	Command error due to an invalid separator
–112	Command error due to a program mnemonic that is too long
–113	Command error due to an undefined header
–120	Command error due to a numeric data error
–123	Command error due to an exponent that is too large
–124	Command error due to too many digits
–131	Command error due to an invalid suffix
–141	Command error due to invalid character data
–144	Command error due to character data that is too long
–200	Execution error due to an invalid command
–222	Execution error due to data that is out of range
–350	Device dependent error due to a queue overflow





---

## 3 Programming Command Reference

This chapter contains a listing of all of the SCPI subsystem commands and subcommands in alphabetical order. The descriptions include syntax requirements, ranges, restrictions, query responses, and status at instrument preset.

## IEEE Common Commands

The following IEEE common commands are used to set and monitor the status registers, and to reset the Test Set.

### IEEE Common Commands Reference

#### Clear Status

\*CLS

This command initializes the status byte register (STBR) and the standard event status register (SESR).

#### Event Status Register Query

\*ESR?

This query command returns a value of the standard event status register (SESR). The range of a value is from 0 to 255.

#### Identification Query

\*IDN?

This query command returns a string of "AGILENT TECHNOLOGIES, E6392B, <serial number>, <firmware revision number>".

#### Instrument Option Query

\*OPT?

This query command returns a value of the option numbers installed in the Test Set as follows:

000	No option
002	Asynchronous Test Mode for MANUAL TEST
040	GPRS Test Mode for MANUAL TEST

#### Operation Complete

\*OPC

\*OPC?

This command enables or queries the OPC bit of the standard event status register (SESR). The query command returns 1.

#### Reset

\*RST

This command executes to run the selftest routine and resets the Test Set to the initial state.

---

**NOTE** The \*RST command does not affect the settings for the serial interface.

---

### Standard Event Status Enable

\*ESE <int>  
\*ESE?

This command specifies or queries a value of the standard event status enable register (SESER). The allowable range is from 0 to 255.

### Status Byte Register Query

\*STB?

This query command returns a value of the status byte register (STBR). The range of a value is from 0 to 255.

## CONFigure Subsystem

This subsystem sets or queries the controls and parameters on the CONFIGURATION screen.

### CONFigure Subsystem Command Reference

Send the "DISPlay:CONFigure" command to display the CONFIGURATION screen before sending the following commands.

#### 13 MHz Reference Oscillator

```
CONFigure:ROSCillator INT|EXT  
CONFigure:ROSCillator?
```

This command toggles the reference signal to be used, between INT for the internal reference and EXT for the external reference. At preset, this is set to INT.

When EXT is selected, an appropriate signal needs to be supplied to the 13 MHz Reference port on the rear panel.

#### Attenuation

```
CONFigure:LOSS ON|OFF|1|0  
CONFigure:LOSS?
```

This command toggles the attenuation function between ON (1) and OFF (0). If set to On, the attenuations for the radio standards are activated to be used in the RF input path and RF output path. At preset, this is set to OFF.

```
CONFigure:LOSS:RFINput  
<real 1>,<real 2>,<real 3>,<real 4> [DB]  
CONFigure:LOSS:RFINput?
```

This command specifies the insertion losses caused by the RF Input path for the radio standards, GSM900, E-GSM, DCS1800, and PCS1900, respectively. The allowable range is from 0.0 to 99.9 (dB) in 0.1 steps. At preset, these are set to 0.0 (dB).

```
CONFigure:LOSS:RFOUtput  
<real 1>,<real 2>,<real 3>,<real 4> [DB]  
CONFigure:LOSS:RFOUtput?
```

This command specifies the insertion losses caused by the RF Output path for the radio standards, GSM900, E-GSM, DCS1800, and PCS1900, respectively. The allowable range is from 0.0 to 99.5 (dB) in 0.5 steps. At preset, these are set to 0.0 (dB).

---

**NOTE** For SIGNAL GENERATOR applications, the attenuations for RF output are used.

---

## Beeper Control

```
CONFigure:BEEPer ON|OFF|1|0
CONFigure:BEEPer?
```

This command toggles the beeper function between ON (1) and OFF (0). If set to ON, there is a beep for each step of operation. If set to OFF, beeps excepting for some errors and warnings are suppressed. At preset, this is set to ON.

## Date

```
CONFigure:DATE <int y>,<int m>,<int d>
CONFigure:DATE?
```

This command defines the test date of the Test Set. <int y> is the year from 1990 to 2089, <int m> is the month from 01 to 12, and <int d> is the day from 01 to 31.

## Network Configuration

```
CONFigure:NETWork:BSPa <int>
CONFigure:NETWork:BSPa?
```

This command defines the number of multiframes (BS\_PA\_MFRMS) between two transmissions. The allowable range is from 2 to 9. At preset, this is set to 2.

```
CONFigure:NETWork:LAC <int>
CONFigure:NETWork:LAC?
```

This command defines the Location Area Code (LAC). The allowable range is from 0 to 65535. At preset, this is set to 1.

```
CONFigure:NETWork:MCC <int>
CONFigure:NETWork:MCC?
```

This command defines the Mobile Country Code (MCC). The allowable range is from 0 to 999. At preset, this is set to 1.

```
CONFigure:NETWork:MNC <int>
CONFigure:NETWork:MNC?
```

This command defines the Mobile Network Code (MNC). The allowable range is from 0 to 99. At preset, this is set to 1.

```
CONFigure:NETWork:NCC <int>
CONFigure:NETWork:NCC?
```

This command defines the Network Color Code (NCC). The allowable range is from 0 to 7. At preset, this is set to 1.

## Panel Key Control

```
CONFigure:PKEY UNLOCK|LOCK
CONFigure:PKEY?
```

This command toggles the panel key control between UNLOCK and LOCK. At preset, this is set to UNLOCK.

If set to LOCK, only AUTOMATIC TEST and CONFIGURATION are allowed to change settings. In AUTOMATIC TEST, however, Radio Standard, BCCH, TCH (TALK), Multi Band, DC Power, and Variable are locked and cannot be changed.

This command is not identical to Lock System Panel of the System commands. See [“Lock System Panel” on page 68](#).

### Printer Control

```
CONFigure:PRINter HPPCL|ESCP  
CONFigure:PRINter?
```

This command toggles the printer type between HPPCL and ESCP. At preset, this is set to HPPCL.

### Time

```
CONFigure:TIME <int h>,<int m>  
CONFigure:TIME?
```

This command sets the clock of the Test Set. <int h> is the hour from 00 to 23 and <int m> is the minutes from 00 to 59.

## Command Reference for File Management Screen

The File commands are used to manage the test setup files on an SRAM memory card.

Send the "DISPlay:CONFigure:FILE" command to display the File Management screen before sending the following commands.

### Delete File

```
CONFigure:FILE:DELeTe <string>
```

This command deletes the test setup file specified by <string> (file name) from an SRAM memory card. <string> must be an existing file name on the SRAM memory card. There is no query form of this command.

### Format Card

```
CONFigure:FILE:FORMat
```

This command initializes an SRAM memory card, however, the firmware update cards can not be initialized. There is no query form of this command.

### List Files

```
CONFigure:FILE:LIST?
```

This query command returns a list of all setup files in an SRAM memory card. The output format is <string total>, <string filenumber\_1>, <string filename\_1>, <string date\_1>, <string time\_1>, <string comment\_1>, ... , <string filenumber\_n>, <string filename\_n>, <string date\_n>, <string time\_n>, and <string commnet\_n>.

- <string total> (3 digits) is the total number of setup files in a SRAM memory card ranging from 000 to 100.
- <string filename\_n> (3 digits) is the "n-th" file number ranging from 000 to 100,
- <string filename\_n> (8 letters) is the file name of the n-th file,
- <string date\_n> (10 digits) is the date in "yyyy/mm/dd" format stored in the n-th file,
- <string time\_n> (5 digits) is the time in "hh:mm" format stored in the n-th file,
- <string comment\_n> (23 letters) is the comment of the n-th file,

where "n" ranges from 1 to the last number of the files in an SRAM card.

### Recall File

CONFigure:FILE:RECall <string>

This command loads the test setup file specified by <string> (file name) from an SRAM memory card into the internal memory of the Test Set. <string> must be an existing file name in the SRAM memory card. There is no query form of this command.

### Save File

CONFigure:FILE:SAVE <string filename>,<string comment>

This command saves the current settings of the Test Set into an SRAM memory card. <string filename> accepts up to 8 alphanumeric characters. <string comment> accepts up to 23 alphanumeric characters. Date and Time are automatically given by the Test Set. There is no query form of this command.



## Command Reference for Test Setup: Test Condition Screen

The Condition commands are used to set the controls and parameters associated with the test condition including the pass/fail test limits for AUTOMATIC TEST and MANUAL TEST. The query commands return the settings of those controls and parameters.

Send the "DISPlay:CONFigure:CONDition" command to display the Test Setup: Test Condition screen before sending the following commands.

---

**NOTE** If Option 040 is installed and the mode is set to GPRS, the test items FER, BER, RX Quality, and RX Level for sensitivity tests can not be displayed in MANUAL TEST, however these can be configured. One command for Sensitivity in BLER is added to the GPRS mode.

---

### Averaging Function

```
CONFigure:CONDition:AVERage OFF|<int>  
CONFigure:CONDition:AVERage?
```

This command defines whether or not to activate the averaging function. The choices are OFF and <int> for the number of averaging times. The allowable range of <int> is from 2 to 99. At preset, this is set to OFF.

### BER BS Level

```
CONFigure:CONDition:SENSitivity:LEVel <real> [DBM]  
CONFigure:CONDition:SENSitivity:LEVel?
```

This command specifies an amplitude of the Test Set for error ratio tests, for each radio standard set by the Radio Format command. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -102.0 (dBm) for GSM900 and E-GSM, -100.0 (dBm) for DCS1800, or -102.0 (dBm) for PCS1900.

### BER Frames

```
CONFigure:CONDition:SENSitivity:FRAMe <int>  
CONFigure:CONDition:SENSitivity:FRAMe?
```

This command specifies the number of the Test Set for error ratio tests. The allowable range is from 1 to 13000 (frames) in 1 steps. At preset, this is set to 10 (frames).

### BER Limit

```
CONFigure:CONDition:LIMit:BER <real h> [PCT]  
CONFigure:CONDition:LIMit:BER?
```

This command specifies the high limit for BER (bit error ratio) tests. The allowable range is from 0.00 to 99.99 (%) in 0.01 steps. At preset, this is set to 2.44 (%).

---

**NOTE** If Option 040 is installed and the mode is set to GPRS, BER can  
noe is measured in MANUAL TEST.

---

### BLER Limit

CONFigure:CONDition:LIMit:BLER <real h> [PCT]  
CONFigure:CONDition:LIMit:BLER?

This command specifies the high limit for BLER (block error ratio) tests if Option 040 is installed and the GPRS mode is selected. The allowable range is from 0.00 to 99.99 (%) in 0.01 steps. At preset, this is set to 2.44 (%).

---

**NOTE** If the mode is set to GPRS on the Test Set with Option 040,  
Sensitivity in BLER is measured in MANUAL TEST.

---

### BS Level

CONFigure:CONDition:AMPLitude <real> [DBM]  
CONFigure:CONDition:AMPLitude?

This command specifies an amplitude of the Test Set applied to the mobile under test. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -50.0 (dBm).

### Burst Timing Limit

CONFigure:CONDition:LIMit:BTIMing  
<real l>,<real h> [Bits]  
CONFigure:CONDition:LIMit:BTIMing?

This command specifies the low and high limits for Burst Timing tests. The allowable range is from -9.9 to +9.9 (bits) in 0.1 steps. At preset, these are set to -1.0 and +1.0 (bits).

### DC Current Limit

CONFigure:CONDition:LIMit:CURREnt:CAMP  
<int l>,<int h> [MA]  
CONFigure:CONDition:LIMit:CURREnt:CAMP?  
  
CONFigure:CONDition:LIMit:CURREnt:TALK  
<int l>,<int h> [MA]  
CONFigure:CONDition:LIMit:CURREnt:TALK?

This command specifies the low and high limits for DC Current tests at Camp On or Talk. The allowable range is from 3 to 1000 (mA) in 1 steps. At preset, these are set to 50 and 200 (mA) for Camp On, and 300 and 700 (mA) for Talk, respectively.

---

**NOTE** If Option 002 is installed and the mode is set to ASYNC in  
MANUAL TEST, the limits for Talk are used for DC Current tests.  
  
If Option 040 is installed and the mode is set to GPRS in  
MANUAL TEST, the limits for Talk are used for DC Current tests.

---

### FER Limit

```
CONFigure:CONDition:LIMit:FER <real h> [PCT]
CONFigure:CONDition:LIMit:FER?
```

This command specifies the high limit for FER (frame erasure rate) tests. The allowable range is from 0.00 to 99.99 (%) in 0.01 steps. At preset, this is set to 0.12 (%).

---

**NOTE** If Option 040 is installed and the mode is set to GPRS in MANUAL TEST, FER can not be measured.

---

### Frequency Error Limit

```
CONFigure:CONDition:LIMit:FREQuency
<int l>,<int h> [HZ]
CONFigure:CONDition:LIMit:FREQuency?
```

This command specifies the low and high limits for Frequency Error tests for each radio standard set by the Radio Format command. The allowable range is from –999 to +999 (Hz) in 1 steps. At preset, these are set to –90 and +90 (Hz) for GSM900 and E-GSM, –171 and +171 (Hz) for DCS1800, and –185 and +185 (Hz) for PCS1900, respectively.

### Loopback Delay

```
CONFigure:CONDition:LDElay SHORT|MID|LONG
CONFigure:CONDition:LDElay?
```

This command defines a time value of Loopback Delay. The choices are SHORT, MID, and LONG (2 seconds). At preset, this is set to MID.

### MS Power Class

```
CONFigure:CONDition:PCLass <int>
CONFigure:CONDition:PCLass?
```

This command specifies a value of MS Power Class for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 5 (+29 dBm)	4 (+33 dBm)
E-GSM	2 (+39 dBm) to 5 (+29 dBm)	4 (+33 dBm)
DCS1800	1 (+30 dBm), 2 (+24 dBm), 3 (+36 dBm)	1 (+30 dBm)
PCS1900	1 (+30 dBm), 2 (+24 dBm), 3 (+33 dBm)	1 (+30 dBm)

## Peak TX Power Limit

```
CONFigure:CONDition:LIMit:TPower
<int>,<real l>,<real h> [DB]
CONFigure:CONDition:LIMit:TPower?
```

This command specifies a value of Power Control Level (PWR CNTL) and the low and high limits for Peak TX Power tests, for each radio standard set by the Radio Format command. The allowable limit range for <real l> and <real h> is from -99.9 to +99.9 (dB) in 0.1 steps. At preset, these are set to -3.0 and +3.0 (dB); an exception is that, for LOW level tests of DCS1800 or PCS1900, the preset values are -4.0 and +4.0 (dB). The power control level and the preset values are as follows:

RFormat	Allowable Range for <int>	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+30 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+30 dBm)

## Phase Error Limit

```
CONFigure:CONDition:LIMit:PHASe:PEAK <real h> [DEG]
CONFigure:CONDition:LIMit:PHASe:PEAK?

CONFigure:CONDition:LIMit:PHASe:RMS <real h> [DEG]
CONFigure:CONDition:LIMit:PHASe:RMS?
```

This command specifies the high limit for Peak or RMS Phase Error tests. The allowable range is from 0.0 to 99.9 (°) in 0.1 steps. At preset, these are set to 20.0 (°) for peak and 5.0 (°) for rms.

## Power Control Level

```
CONFigure:CONDition:PLEVel:HIGH <int>
CONFigure:CONDition:PLEVel:HIGH?

CONFigure:CONDition:PLEVel:MEDium <int>
CONFigure:CONDition:PLEVel:MEDium?

CONFigure:CONDition:PLEVel:LOW <int>
CONFigure:CONDition:PLEVel:LOW?

CONFigure:CONDition:PLEVel:MANual <int>
CONFigure:CONDition:PLEVel:MANual?
```

This command sets a value of Power Control Level (PWR CNTL) to each of the High, Medium, and Low ranges for AUTOMATIC TEST, or sets a value of PWR CNTL for MANUAL TEST, for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value	
		AUTO	MANUAL
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5, 10, 15	5
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5, 10, 15	5
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0, 5, 10	0
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0, 5, 10	0

### Radio Standard

```
CONFigure:CONDition:RFormat  
GSM900|E-GSM|DCS1800|PCS1900  
CONFigure:CONDition:RFormat?
```

This command defines a system of Radio Standard to be tested. The choices are GSM900, E-GSM, DCS1800, and PCS1900. At preset, this is set to GSM900.

### RF Output

```
CONFigure:CONDition:RFOutput AUTO|ON  
CONFigure:CONDition:RFOutput?
```

This command defines a mode of RF Output. The choices are AUTO and ON. If set to AUTO, the RF signal is supplied only during test cycles. At preset, this is set to ON.

### RX Level Limit

```
CONFigure:CONDition:LIMit:LEVel <int l>,<int h>  
CONFigure:CONDition:LIMit:LEVel?
```

This command specifies the low and high limits for RX Level tests, for each radio standard set by the Radio Format command. The choices and the preset values are as follows:

		Preset Values	
Choice	RX Level [dBm]	RFormat	High
0	<-110	GSM900	12
1	-110 to -109	E-GSM	12
2	-109 to -108	DCS1800	14
.....	.....	PCS1900	12
62	-49 to -48		
63	>-48		

**NOTE** If Option 040 is installed and the mode is set to GPRS in MANUAL TEST, RX Level can not be measured.

### RX Quality Limit

CONFigure:CONDition:LIMit:QUALity <int l>,<int h>  
 CONFigure:CONDition:LIMit:QUALity?

This command specifies the low and high limits for RX Quality tests. The choices are 0 (<0.2), 1 (0.2 to 0.4), ....., 6 (6.4 to 12.8), and 7 (>12.8%). At preset, these are set to 0 and 4.

**NOTE** If Option 040 is installed and the mode is set to GPRS in MANUAL TEST, RX Quality can not be measured.

## Command Reference for Test Setup: Test Sequence Screen

The Sequence commands are used to control the test flow and test sequences, and also to define whether or not to execute pass/fail tests for the six measurements at the specified TCH or DCP. The query commands return the settings of those controls and parameters.

Send the "DISPlay:CONFigure:SEQuence" command to display the Test Set: Test Sequence screen for AUTOMATIC TEST before sending the following commands.

### 1st Call Test

```
CONFigure:SEQuence:SIGNaling:CALL1 MS|BS  
CONFigure:SEQuence:SIGNaling:CALL1?
```

This command defines the first caller at the second test flow step. The choices are MS and BS. If MS is selected, the fifth step automatically becomes MS Release, and the sixth and seventh automatically become BS Call and BS Release. At preset, this is set to MS.

### 2nd Call Test

```
CONFigure:SEQuence:SIGNaling:CALL2 ON|OFF|1|0  
CONFigure:SEQuence:SIGNaling:CALL2?
```

This command defines whether or not to include the second call in a test flow. The choices are ON (1) for Run and OFF (0) for --- (skip). At preset, this is set to ON.

### 6 Measurement DC Power Loop

```
CONFigure:SEQuence:VARiable:DCP:VOLT1 <real> [V]  
CONFigure:SEQuence:VARiable:DCP:VOLT1?
```

```
CONFigure:SEQuence:VARiable:DCP:VOLT2 <real> [V]  
CONFigure:SEQuence:VARiable:DCP:VOLT2?
```

```
CONFigure:SEQuence:VARiable:DCP:VOLT3 <real> [V]  
CONFigure:SEQuence:VARiable:DCP:VOLT3?
```

```
CONFigure:SEQuence:VARiable:DCP:VOLT4 <real> [V]  
CONFigure:SEQuence:VARiable:DCP:VOLT4?
```

```
CONFigure:SEQuence:VARiable:DCP:VOLT5 <real> [V]  
CONFigure:SEQuence:VARiable:DCP:VOLT5?
```

```
CONFigure:SEQuence:VARiable:DCP:VOLT6 <real> [V]  
CONFigure:SEQuence:VARiable:DCP:VOLT6?
```

These commands set the Variable field to DC Power (DCP) and specify the six voltage values of DCP at which the six measurements are to be made. The DC Power supply mode needs to be set to either Auto or On. These measurements are made at one fixed traffic channel. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. The value 99.9 causes the DCP test to be skipped (---- shown in the table cell). At preset, these are set to 3.0 (V).

## 6 Measurement Traffic Channel Loop

CONFigure:SEquence:VARiable:TCH:CHANnel1 <int>  
CONFigure:SEquence:VARiable:TCH:CHANnel1?

CONFigure:SEquence:VARiable:TCH:CHANnel2 <int>  
CONFigure:SEquence:VARiable:TCH:CHANnel2?

CONFigure:SEquence:VARiable:TCH:CHANnel3 <int>  
CONFigure:SEquence:VARiable:TCH:CHANnel3?

CONFigure:SEquence:VARiable:TCH:CHANnel4 <int>  
CONFigure:SEquence:VARiable:TCH:CHANnel4?

CONFigure:SEquence:VARiable:TCH:CHANnel5 <int>  
CONFigure:SEquence:VARiable:TCH:CHANnel5?

CONFigure:SEquence:VARiable:TCH:CHANnel6 <int>  
CONFigure:SEquence:VARiable:TCH:CHANnel6?

These commands set the Variable field to TCH (Traffic Channel) and specify the six channel numbers at which the six measurements are to be made, for each radio standard in conjunction with the Multi Band setting. These measurements are made at one fixed voltage of DC Power. The value 9999 causes the TCH test to be skipped (---- shown in the table cell). The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1, 62, 124
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1, 62, 124
	OFF	0 to 124 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512, 699, 885
	E-GSM	512 to 885; 0 to 124 975 to 1023	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512, 661, 810

## BCCH Channel

CONFigure:SEquence:BCCH:CHANnel <int>  
CONFigure:SEquence:BCCH:CHANnel?



This command specifies the channel number of Broadcast Control Channel (BCCH) for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	20
E-GSM	0 to 124, 975 to 1023	20
DCS1800	512 to 885	698
PCS1900	512 to 810	698

### BCCH Frequency

```
CONFigure:SEquence:BCCH:FREquency  
<real> [HZ | KHZ | MHZ | MAHZ]  
CONFigure:SEquence:BCCH:FREquency?
```

This command specifies the frequency of Broadcast Control Channel (BCCH) for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range [Hz]	Preset Value [Hz]
GSM900	890200000 to 914800000	890200000
E-GSM	880200000 to 914800000	890200000
DCS1800	1710200000 to 1784800000	1710200000
PCS1900	1850200000 to 1909800000	1850200000

### Burst Timing Test

```
CONFigure:SEquence:BTIMing <int>  
CONFigure:SEquence:BTIMing?
```

This command defines whether or not to include Burst Timing tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

### DC Current Test

```
CONFigure:SEquence:CURRENT <int>
CONFigure:SEquence:CURRENT?
```

This command defines whether or not to include DC Current tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

### DC Power Mode

```
CONFigure:SEquence:DCPower:MODE AUTO | ON | OFF
CONFigure:SEquence:DCPower:MODE?
```

This command defines a supply mode of DC Power. The choices are AUTO, ON, and OFF. At preset, this is set to OFF.

- If set to AUTO, DC Power is supplied during a measurement cycle or until a measurement is aborted.
- If set to ON, DC Power is always supplied.
- If set to OFF, DC Power is not supplied and the Variable field is automatically set to TCH.

### DC Power Voltage

```
CONFigure:SEquence:DCPower:VOLT <real> [V]
CONFigure:SEquence:DCPower:VOLT?
```

This command specifies a voltage value of DC Power. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

### Frequency Error Test

```
CONFigure:SEquence:FREQUENCY <int>
CONFigure:SEquence:FREQUENCY?
```

This command defines whether or not to include Frequency Error tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

### Instruction Message #

```
CONFigure:SEquence:SIGNaling:MESSage1 <string>  
CONFigure:SEquence:SIGNaling:MESSage1?
```

```
CONFigure:SEquence:SIGNaling:MESSage2 <string>  
CONFigure:SEquence:SIGNaling:MESSage2?
```

```
CONFigure:SEquence:SIGNaling:MESSage3 <string>  
CONFigure:SEquence:SIGNaling:MESSage3?
```

```
CONFigure:SEquence:SIGNaling:MESSage4 <string>  
CONFigure:SEquence:SIGNaling:MESSage4?
```

```
CONFigure:SEquence:SIGNaling:MESSage5 <string>  
CONFigure:SEquence:SIGNaling:MESSage5?
```

```
CONFigure:SEquence:SIGNaling:MESSage6 <string>  
CONFigure:SEquence:SIGNaling:MESSage6?
```

```
CONFigure:SEquence:SIGNaling:MESSage7 <string>  
CONFigure:SEquence:SIGNaling:MESSage7?
```

This command creates an instruction message for each test flow step. The allowable length of <string> is up to 69 alphanumeric characters including spaces. At preset, these are set as follows:

1. Turn on MS power, wait for Location Update.
2. Make MS Call or respond to BS Call.
3. Talk to the mobile and press [Pass] or [Fail] with the result.
4. Wait for the RF Test to complete.
5. End call (for MS Call) or wait for call to end.
6. Respond to BS Call or make MS Call.
7. Wait for call to end (for BS Release) or end (for MS Release).

## LOC. Update

```
CONFigure:SEquence:SIGNaling:LOCUpdate ON|OFF|1|0
CONFigure:SEquence:SIGNaling:LOCUpdate?
```

This command defines whether or not to include LOC. Update tests in the test flow step. The choices are ON (1) for Run and OFF (0) for --- (skip). At preset, this is set to ON.

## Multi Band

```
CONFigure:SEquence:MBAND DCS1800|OFF
CONFigure:SEquence:MBAND?
```

This command specifies whether or not to include Multi Band tests for DCS1800 when GSM900 or E-GSM is specified by the Radio Format command.

```
CONFigure:SEquence:MBAND GSM900|E-GSM|OFF
CONFigure:SEquence:MBAND?
```

This command specifies whether or not to include Multi Band tests for GSM900 or E-GSM when DCS1800 is specified by the Radio Format command.

If PCS1900 is specified by the Radio Format command, the Multi Band command is automatically set to OFF.

## Peak TX Power Test

```
CONFigure:SEquence:TPOWER:HIGH <int>
CONFigure:SEquence:TPOWER:HIGH?

CONFigure:SEquence:TPOWER:MEDIUM <int>
CONFigure:SEquence:TPOWER:MEDIUM?

CONFigure:SEquence:TPOWER:LOW <int>
CONFigure:SEquence:TPOWER:LOW?
```

This command defines whether or not to include Peak TX Power tests at the High, Medium or Low range in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

### Phase Error Test

```
CONFigure:SEquence:PHASe <int>  
CONFigure:SEquence:PHASe?
```

This command defines whether or not to include Phase Error tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

### Power Ramp Test

```
CONFigure:SEquence:RAMP <int>  
CONFigure:SEquence:RAMP?
```

This command defines whether or not to include Power Ramp tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

### Radio Standard

```
CONFigure:SEquence:RFormat GSM900|E-GSM|DCS1800|PCS1900  
CONFigure:SEquence:RFormat?
```

This command defines a system of Radio Standard to be tested. The choices are GSM900, E-GSM, DCS1800, and PCS1900. At preset, this is set to GSM900. If PCS1900 is selected, the Multi Band command is automatically set to OFF.

## RX Level Test

```
CONFigure:SEquence:LEVel <int>
CONFigure:SEquence:LEVel?
```

This command defines whether or not to include RX Level tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

## RX Quality Test

```
CONFigure:SEquence:QUALity <int>
CONFigure:SEquence:QUALity?
```

This command defines whether or not to include RX Quality tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1
- bit 1 (2): For testing TCH2 or DCP2
- bit 2 (4): For testing TCH3 or DCP3
- bit 3 (8): For testing TCH4 or DCP4
- bit 4 (16): For testing TCH5 or DCP5
- bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

## Sensitivity Test

```
CONFigure:SEquence:SENSitivity <int>
CONFigure:SEquence:SENSitivity?
```

This command defines whether or not to include Sensitivity tests in the test sequence for the six measurements. <int> is a binary coded decimal ranging from 0 to 63 as follows:

- bit 0 (1): For testing TCH1 or DCP1

bit 1 (2): For testing TCH2 or DCP2

bit 2 (4): For testing TCH3 or DCP3

bit 3 (8): For testing TCH4 or DCP4

bit 4 (16): For testing TCH5 or DCP5

bit 5 (32): For testing TCH6 or DCP6

The choices for each bit are 1 for Run and 0 for --- (skip). At preset, this is set to 63.

### Talk Test

```
CONFigure:SEquence:SIGNaling:TALK ON|OFF|1|0  
CONFigure:SEquence:SIGNaling:TALK?
```

This command defines whether or not to include the Talk step in a test flow. The choices are ON (1) for Run and OFF (0) for --- (skip). At preset, this is set to ON.

### Talk Test TCH Channel

```
CONFigure:SEquence:TCH:CHANnel <int>  
CONFigure:SEquence:TCH:CHANnel?
```

This command specifies the channel number of Traffic Channel for Talk tests when Variable is set to TCH, for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	1
E-GSM	0 to 124, 975 to 1023	1
DCS1800	512 to 885	512
PCS1900	512 to 810	512

### Talk Test TCH Frequency

```
CONFigure:SEquence:TCH:FREquency  
<real> [HZ|KHZ|MHZ|MAHZ]  
CONFigure:SEquence:TCH:FREquency?
```

This command specifies the frequency of Traffic Channel for Talk tests when Variable is set to TCH, for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

<b>RFormat</b>	<b>Allowable Range [Hz]</b>	<b>Preset Value [Hz]</b>
GSM900	890200000 to 914800000	890200000
E-GSM	880200000 to 914800000	890200000
DCS1800	1710200000 to 1784800000	1710200000
PCS1900	1850200000 to 1909800000	1850200000



## DISPlay Subsystem

The DISPlay subsystem commands are used to select which of the Test Set's screens is being programmed. No query is available for these commands.

### Command Reference for Initial Screen

#### Initial Screen

DISPlay:INITial

This command selects the initial screen for activating one of the function modes. A test procedure can be selected from an SRAM memory card on this screen.

### Command Reference for AUTOMATIC TEST Screens

#### Burst Timing/Power Ramp

DISPlay:AUTO:BTIMing

This command selects the Burst Timing/Power Ramp measurement screen for AUTOMATIC TEST.

#### DC Current

DISPlay:AUTO:CURREnt

This command selects the DC Current measurement screen for AUTOMATIC TEST.

#### Peak TX Power

DISPlay:AUTO:TPOWer

This command selects the Peak TX Power measurement screen for AUTOMATIC TEST.

#### Phase Error/Frequency Error

DISPlay:AUTO:PHASe

This command selects the Phase Error/Frequency Error measurement screen for AUTOMATIC TEST.

#### Sensitivity/RX Quality/RX Level

DISPlay:AUTO:SENSitivity

This command selects the Sensitivity/RX Quality/RX Level measurement screen for AUTOMATIC TEST.

### Stand-by

DISPlay:AUTO:STBY

This command selects the Stand-by screen for AUTOMATIC TEST.

## Command Reference for CONFIGURATION Screens

### File Management

DISPlay:CONFgiure:FILE

This command selects the File Management screen. The files including test setups for all function modes are saved in and recalled or deleted from an SRAM memory card. Also an SRAM memory card can be initialized.

### System Configuration

DISPlay:CONFigure

This command selects the CONFIGURATION screen. The parameters and controls on this screen set the fundamental information for all function modes of the Test Set.

**NOTE** “Serial Port” is not programmable but manually set.

### Test Condition

DISPlay:CONDition

This command selects the Test Setup: Test Condition screen. The parameters and controls on this screen set the test conditions for AUTOMATIC TEST and MANUAL TEST.

### Test Sequence

DISPlay:SEQuence

This command selects the Test Setup: Test Sequence screen. The parameters and controls on this screen set the test sequence for AUTOMATIC TEST.

## Command Reference for MANUAL TEST Screens

### DC Current

DISPlay:MANual:CURRent

This command selects the DC Current measuring screen for MANUAL TEST.

### Measuring

DISPlay:MANual:MEASure

This command selects the Measuring screen for MANUAL TEST.

### Peak TX Power/Burst Timing/Power Ramp

DISPlay:MANual:TPOWer

This command selects the Peak TX Power/Burst Timing/Power Ramp measuring screen for MANUAL TEST.

---

**NOTE** If Option 040 is installed and the mode is set to GPRS in MANUAL TEST, this command selects the Peak TX Power/Power vs Time screen.

---

### Phase Error/Frequency Error

DISPlay:MANual:PHASe

This command selects the Phase Error/Frequency Error measuring screen for MANUAL TEST.

### Sensitivity/RX Quality/RX Level

DISPlay:MANual:SENSitivity

This command selects the Sensitivity/RX Quality/RX Level measuring screen for MANUAL TEST.

---

**NOTE** If Option 002 is installed and the mode is set to ASYNC in MANUAL TEST, this command is invalid.

If Option 040 is installed and the mode is set to GPRS in MANUAL TEST, this command selects the Sensitivity screen to measure BLER.

---

### Spectrum Monitor

DISPlay:MANual:SMONitor

This command selects the Spectrum Monitor measuring screen for MANUAL TEST.

### Stand-by

DISPlay:MANual:STBY

This command selects the Stand-by screen for MANUAL TEST.

---

**NOTE** This command is valid only for Test Sets *without* any of Option 002 and Option 040.

---

### Stand-by (Asynchronous Mode)

DISPlay:MANual:ASYN:STBY

This command selects the asynchronous mode Stand-by screen for MANUAL TEST.

---

**NOTE** This command is valid only for Test Sets *with* Option 002.

---

#### Stand-by (GPRS Mode)

DISPlay:MANual:GPRS:STBY

This command selects the GPRS mode Stand-by screen for MANUAL TEST.

---

**NOTE** This command is valid only for Test Sets *with* Option 040.

---

#### Stand-by (Synchronous Mode)

DISPlay:MANual:SYNC:STBY

This command selects the synchronous mode Stand-by screen for MANUAL TEST.

---

**NOTE** This command is valid only for Test Sets *with* any of Option 002 and Option 040.

---

### Command Reference for SIGNAL GENERATOR Screen

#### RF Signal Generator

DISPlay:RFGenerator

This command selects the screen for SIGNAL GENERATOR.

---

**NOTE** This command is valid only for Test Sets *with* Option 002.

---

### Command Reference for SPECTRUM MONITOR Screen

#### Spectrum Monitor

DISPlay:SMONitor

This command selects the screen for SPECTRUM MONITOR.

---

**NOTE** This command is valid only for Test Sets *with* Option 002.

---

## HCOPy Subsystem

The HCOPy commands are used to control the printing function.

### HCOPy Subsystem Command Reference

#### **Abort Printing**

HCOPy:ABORt

This command stops to print. There is no query form of this command.

#### **Print All Items**

HCOPy:ITEM:ALL

This command executes to print the measured data and pass/fail results. There is no query form of this command.

#### **Dump Screen Image**

HCOPy:SDUMp

This command executes to print a screen image. There is no query form of this command.

## RFGenerator Subsystem

The RFGenerator subsystem commands are used to set and read the controls and parameters of the SIGNAL GENERATOR functions. Send the "DISPlay:RFGenerator" command to display the SIGNAL GENERATOR screen before sending the following commands.

**NOTE** This section is applicable only for Test Sets *with* Option 002.

**NOTE** For Test Sets with Option 002, the Radio Standard and Channel settings done in this function are copied to SPECTRUM MONITOR and vice versa.

## RFGenerator Subsystem Command Reference

### Amplitude

```
RFGenerator:AMPLitude <real> [DB]
RFGenerator:AMPLitude?
```

This command specifies an output amplitude of RF Level. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -50.0 (dBm).

### DC Power Mode

```
RFGenerator:DCPower:MODE ON|OFF|1|0
RFGenerator:DCPower:MODE?
```

This command defines a supply mode of DC Power. The choices are ON (1) and OFF (0). If set to ON (1), DC Power is always supplied. If set to OFF (0), DC Power is not supplied. At preset, this is set to OFF.

### DC Power Voltage

```
RFGenerator:DCPower:VOLT <real> [V]
RFGenerator:DCPower:VOLT?
```

This command specifies a voltage value of DC Power. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

### Modulation Function

```
RFGenerator:MODulation OFF|PN9|ALL0
RFGenerator:MODulation?
```

This command defines a type of Modulation. The choices are OFF, PN9 and ALL\_0. At preset, this is set to OFF.

- If OFF is selected, the RF signal is a continuous wave.

- If PN9 is selected, the RF signal is modulated by the 9-step pseudo-random binary sequence code.
- If ALL0 is selected, the RF signal is modulated by the all zero digital code.

### Radio Standard

```
RFGenerator:RFormat GSM900|E-GSM|DCS1800|PCS1900
RFGenerator:RFormat?
```

This command defines a system of Radio Standard to be tested. The choices are GSM900, E-GSM, DCS1800, and PCS1900. At preset, this is set to GSM900.

### RF Signal Output Mode

```
RFGenerator:RFOutput ON|OFF|1|0
RFGenerator:RFOutput?
```

This command defines a mode of RF Output. The choices are ON (1) and OFF (0). At preset, this is set to OFF.

### Traffic Channel

```
RFGenerator:CHANnel <int>
RFGenerator:CHANnel?
```

This command specifies the channel number of Traffic Channel (TCH) for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	1
E-GSM	0 to 124, 975 to 1023	1
DCS1800	512 to 885	512
PCS1900	512 to 810	512

### Traffic Channel Frequency

```
RFGenerator:FREquency <real> [HZ|KHZ|MHZ|MAHZ]
RFGenerator:FREquency?
```

This command specifies the frequency of Traffic Channel (TCH) for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

<b>RFormat</b>	<b>Allowable Range [Hz]</b>	<b>Preset Value [Hz]</b>
GSM900	935200000 to 959800000	935200000
E-GSM	925200000 to 959800000	935200000
DCS1800	1805200000 to 1879800000	1805200000
PCS1900	1930200000 to 1989800000	1930200000



## SMONitor Subsystem

The SMONitor subsystem commands are used to set and read the controls and parameters of the SPECTRUM MONITOR function. Send the "DISPlay:SMONitor" command to display the SPECTRUM MONITOR screen before sending the following commands.

---

**NOTE** This section is applicable only for Test Sets with Option 002.

---

---

**NOTE** For Test Sets with Option 002, the Radio Standard and Channel settings done in this function are copied to SPECTRUM MONITOR and vice versa.

---

## SMONitor Subsystem Command Reference

### Averaging Function

SMONitor:AVERage OFF | <int>  
SMONitor:AVERage?

This command defines whether or not to activate the averaging function. The choices are OFF and <int> for averaging time. The allowable range is from 2 to 99. At preset, this is set to OFF.

### DC Power Mode

SMONitor:DCPower:MODE ON | OFF | 1 | 0  
SMONitor:DCPower:MODE?

This command defines a supply mode of DC Power. The choices are ON (1) and OFF (0). If set to ON (1), DC Power is always supplied. If set to OFF (0), DC Power is not supplied. At preset, this is set to OFF.

### DC Power Voltage

SMONitor:DCPower:VOLT <real> [V]  
SMONitor:DCPower:VOLT?

This command specifies a voltage value of DC Power. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

### Display Span

SMONitor:SPAN 400k | 100k  
SMONitor:SPAN?

This command specifies a frequency bandwidth of Span. The choices are 400k for the 0 to 400 kHz span, and 100k for the  $\pm 100$  kHz span relative to the Traffic Channel frequency. At preset, this is set to 400k.

## Marker Measurement

SMONitor:RESults:MARKer?

This query command returns a set of values, <string 1>, <string 2>, <string 3>, <string 4>, and <string 5>, for the marker position.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- The definitions and effective ranges of <string 2> (10 digits), <string 3> (5 digits), <string 4> (7 digits), and <string 5> (5 digits) are shown in the table below. If any measurement is overranged, underranged or not made, the values 999999999 for <string 2>, -99.9 for <string 3> and <string 5>, and +999999 for <string 4>, are returned.

Value	Definition	Range: Span 0 to 400 kHz	Range: Span $\pm 100$ kHz
<string 2>	Absolute RF frequency [Hz]	0880200000 to 0915200000, 1710200000 to 1785200000, 1850200000 to 1909800000	0880100000 to 0914900000, 1710100000 to 1784900000, 1850100000 to 1909500000
<string 3>	Absolute RF level [dBm]	-99.9 to +99.9	-99.9 to +99.9
<string 4>	Relative RF frequency [Hz]	+000000 to +400000	-100000 to +100000
<string 5>	Relative RF level [dB]	-99.9 to +0.00	-99.9 to +0.00

## Marker Position Control

SMONitor:RESults:MARKer:POINT UP|DOWN

SMONitor:RESults:MARKer:POINT <real> [HZ|KHZ|MHZ|MAHZ]

SMONitor:RESults:MARKer:POINT?

This command allows you to move the marker UP or DOWN, or by a numeric value <real>. The allowable range is from 0 to 400000 (Hz) for the 0 to 400 kHz span, or from -100000 to +100000 (Hz) for the  $\pm 100$  kHz span. At preset, this is set to 1000 (Hz) if Span is set to 0 to 400 kHz, or 100 (Hz) if Span is set to  $\pm 100$  kHz.

## Measurement Range

SMONitor:RANGe -3DBM|+9DBM|+19DBM|+29DBM|+39DBM

SMONitor:RANGe?

This command specifies an absolute power level of Measurement Range. At preset, this is set to +39DBM. The choices are as follows:

- -3DBM: The maximum input level is -3 dBm.
- +9DBM: The maximum input level is +9 dBm.
- +19DBM: The maximum input level is +19 dBm.
- +29DBM: The maximum input level is +29 dBm.

- +39DBM: The maximum input level is +39 dBm.

## Measurement Result

SMONitor:RESults?

- If the 0 to 400 kHz span is selected, this query command returns a set of test result values, <string 1>, <string 2>, <string 3>, <string 4>, and <string 5>.
  - o <string 1> (1 digit) is 0 when all measured results are within normal range, or 1 if any measurement is overranged, underranged or not made.
  - o The definitions and effective ranges of <string 2> (10 digits), <string 3> (5 digits), <string 4> (5 digits), and <string 5> (5 digits) are shown in the table below. If any measurement is overranged, underranged or not made, the values 9999999999 for <string 2> and -99.9 for <string 3>, <string 4> and <string 5>, are returned.
- If  $\pm 100$  kHz is selected, this query command returns a set of test result values, <string 1>, <string 2>, <string 3>, <string 4>, <string 5>, and <string 6>.
  - o <string 1> (1 digit) is 0 when all measured results are within normal range, or 1 if any measurement is overranged, underranged or not made.
  - o The definitions and effective ranges of <string 2> (10 digits), <string 3> (5 digits), <string 4> (5 digits), <string 5> (5 digits), and <string 6> (5 digits) are shown in the table below. If any measurement is overranged, underranged or not made, the values 9999999999 for <string 2> and -99.9 for <string 3>, <string 4>, <string 5> and <string 6> are returned.

Value	Definition	Range: Span 0 to 400 kHz	Range: Span $\pm 100$ kHz
<string 2>	Absolute peak RF frequency [Hz]	0880200000 to 0915200000, 1710200000 to 1785200000, 1850200000 to 1909800000	0880100000 to 0914900000, 1710100000 to 1784900000, 1850100000 to 1909500000
<string 3>	Absolute peak RF level [dBm]	-99.9 to +99.9	-99.9 to +99.9
<string 4>	Relative RF level [dB]	-99.9 to +00.0 (at +200 kHz)	-99.9 to +00.0 (at or close to +67.7 kHz)
<string 5>	Relative RF level [dB]	-99.9 to +00.0 (at +250 kHz)	-99.9 to +00.0 (at or close to $\pm 0$ kHz)
<string 6>	Relative RF level [dB]	<not applicable>	-99.9 to +00.0 (at or close to -67.7 kHz)

## Radio Standard

SMONitor:RFormat GSM900 | E-GSM | DCS1800 | PCS1900  
SMONitor:RFormat?

This command defines a system of Radio Standard to be tested. The choices are GSM900, E-GSM, DCS1800, and PCS1900. At preset, this is set to GSM900.

### Resolution Bandwidth

SMONitor:RBWidth 10k|30k  
SMONitor:RBWidth?

This command specifies a value of RBW (Resolution Bandwidth). The choices are 10k for 10 kHz and 30k for 30 kHz. At preset, this is set to 30k.

### Traffic Channel

SMONitor:CHANnel <int>  
SMONitor:CHANnel?

This command specifies the channel number of Traffic Channel to be analyzed for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	1
E-GSM	0 to 124, 975 to 1023	1
DCS1800	512 to 885	512
PCS1900	512 to 810	512

### Traffic Channel Frequency

SMONitor:FREquency <real> [HZ|KHZ|MHZ|MAHZ]  
SMONitor:FREquency?

This command specifies the frequency of Traffic Channel to be analyzed for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range [Hz]	Preset Value [Hz]
GSM900	890200000 to 914800000	890200000
E-GSM	880200000 to 914800000	890200000
DCS1800	1710200000 to 1784800000	1710200000
PCS1900	1850200000 to 1909800000	1850200000

## SYSTem Subsystem

The SYSTem commands are used to control the overall system function.

### SYSTem Subsystem Command Reference

#### Lock System Panel

```
SYSTem:KLOCK ON|OFF|1|0  
SYSTem:KLOCK?
```

This command locks the control panel functions for protection. At preset, this is set to OFF (0).

If set to ON (1), all of the function modes become inactive, but only the Local softkey is defined. By pressing the Local softkey or sending the commands SYSTem:KLOCK OFF (0), the Test Set returns to the normal operation.

This command is not identical to the panel key lock in the CONFIGURATION screen. See [“Panel Key Control” on page 37](#).

#### Softkey Memory

```
SYSTem:MEMory:AMPLitude <real 1>,<real 2> [DBM]  
SYSTem:MEMory:AMPLitude?  
  
SYSTem:MEMory:CHANnel <int 1>,<int 2>  
SYSTem:MEMory:CHANnel?  
  
SYSTem:MEMory:PLEVel <int 1>,<int 2>  
SYSTem:MEMory:PLEVel?
```

This command stores two settings of Amplitude, Channel, or Power Control Level into Memory 1 and 2. The stored values are displayed on those softkeys.

#### System Error

```
SYSTem:ERRor?
```

This query command returns a set of values, <string 1> and <string 2>, for error numbers and error messages. Refer to [“Error Messages” on page 31](#) for the listings of the error messages.

#### System Setup

```
SYSTem:SETup?
```

This query command returns a set of values, <string 1>, <string 2>, . . . ., <string n>, for all of the Test Set settings.

```
SYSTem:SETup <string 1>,<string 2>,. . . .,<string n>
```

This command sets all of the Test Set settings at one time.

<string 1>, <string 2>, . . . . , <string n> must be the data which is returned by the query command SYSTem:SETup?

## TESTs Subsystem for AUTOMATIC TEST

This function allows to execute the overall measurements and pass/fail tests with the automatic procedure. Test sequence and condition are configurable with the CONFigure:SEQuence command and CONFigure:CONDition command.

---

**NOTE** For Test Sets with Option 002, the DC Power voltage setting made in this function are copied to the MANUAL TEST, SIGNAL GENERATOR and SPECTRUM MONITOR and vice versa.

---

### All Tests Results (Detail)

TESTs:AUTO:RESUltS:WHOLe?

This query command returns all of the test results values, <string 1>, <string 2>, ..., <string 186>, for AUTOMATIC TEST.

<string 1>, <string 2>, <string 3>, <string 4>, <string 5>:

Peak TX Power results (TCH1) - Refer to [“Peak TX Power Measurement” on page 75](#) for the meanings of each <string>.

<string 6>, <string 7>, <string 8>:

Burst Timing results (TCH1) - Refer to [“Burst Timing Measurement” on page 72](#) for the meanings of each <string>.

<string 9>, <string 10>:

Power Ramp results (TCH1) - Refer to [“Power Ramp Test” on page 74](#) for the meanings of each <string>.

<string 11>, <string 12>, <string 13>, <string 14>:

Phase Error results (TCH1) - Refer to [“Phase Error Marker Measurement” on page 76](#) for the meanings of each <string>.

<string 15>, <string 16>, <string 17>:

Frequency Error results (TCH1) - Refer to [“Frequency Error Measurement” on page 76](#) for the meanings of each <string>.

<string 18>, <string 19>, <string 20>, <string 21>:

Sensitivity results (TCH1) - Refer to [“Sensitivity Measurement” on page 79](#) for the meanings of each <string>.

<string 22>, <string 23>, <string 24>:

RX Quality results (TCH1) - Refer to [“RX Quality Measurement” on page 78](#) for the meanings of each <string>.

<string 25>, <string 26>, <string 27>:

RX Level results (TCH1) - Refer to [“RX Level Measurement” on page 78](#) for the meanings of each <string>.

<string 28>, <string 29>, <string 30>, <string 31>:

DC Current results (TCH1) - Refer to “DC Current Measurement” on page 74 for the meanings of each <string>.

<string 32>, <string 33>, <string 34>, <string 35>, <string 36>:

Peak TX Power results (TCH2)

.....

.....

<string 183>, <string 184>, <string 185>, <string 186>:

DC Current results (TCH6)

## All Tests Results (Summary)

TESTs:AUTO:RESuLts:ALL?

This query command returns a set of values, <string 1> and <string 2>, that summarize the test results.

- <string 1> is the 8-bit binary coded decimal ranging from 0 to 255 according to the pass/fail results for all test flow steps. Each 8-bit binary coded decimal is defined as follows:

bit 0 (1): LOC. Update

bit 1 (2): 1st Call

bit 2 (4): Talk

bit 3 (8): RF Test

bit 4 (16): 1st Release

bit 5 (32): 2nd Call

bit 6 (64): 2nd Release

bit 7 (128): Measurement aborted

The choices for each bit are 1 for Fail and 0 for Pass or Skip.

- <string 2> is a 10-bit binary coded decimal ranging from 0 to 1023 according to the pass/fail results for all Test Items in the table. Each 10-bit binary coded decimal is defined as follows:

bit 0 (1): Peak TX Power

bit 1 (2): Burst Timing

bit 2 (4): Power Ramp

bit 3 (8): Phase Error

bit 4 (16): Frequency Error

bit 5 (32): Sensitivity

bit 6 (64): RX Quality



bit 7 (128): RX Level

bit 8 (256): DC Current

bit 9 (512): Test aborted

The choices for each bit are 1 for Fail and 0 for Pass or Skip.

If there are no test results nor pass/fail results, all bits are set to 1, resulting to return the value 1023.

## Command Reference for Burst Timing/Power Ramp Measurement Screen

Send the "DISPlay:AUTO:BTIMing" command to display the Burst Timing/Power Ramp measurement screen for AUTOMATIC TEST before sending the following commands.

### Burst Timing Measurement

```
TESTs:AUTO:RESUltS:BTIMing1?  
TESTs:AUTO:RESUltS:BTIMing2?  
TESTs:AUTO:RESUltS:BTIMing3?  
TESTs:AUTO:RESUltS:BTIMing4?  
TESTs:AUTO:RESUltS:BTIMing5?  
TESTs:AUTO:RESUltS:BTIMing6?
```

This query command returns a set of test result values, <string 1>, <string 2> and <string 3>, for each of the six measurements of Burst Timing.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (4 digits) is the measured data ranging from -9.9 to +9.9 bits. If any measurement is overranged, underranged or not made, the value -9.9 is returned.

### Power Ramp Graph Zoom

```
TESTs:AUTO:RESUltS:RAMP1:ZOOM ON|OFF|1|0  
TESTs:AUTO:RESUltS:RAMP1:ZOOM?  
  
TESTs:AUTO:RESUltS:RAMP2:ZOOM ON|OFF|1|0  
TESTs:AUTO:RESUltS:RAMP2:ZOOM?  
  
TESTs:AUTO:RESUltS:RAMP3:ZOOM ON|OFF|1|0  
TESTs:AUTO:RESUltS:RAMP3:ZOOM?  
  
TESTs:AUTO:RESUltS:RAMP4:ZOOM ON|OFF|1|0  
TESTs:AUTO:RESUltS:RAMP4:ZOOM?  
  
TESTs:AUTO:RESUltS:RAMP5:ZOOM ON|OFF|1|0  
TESTs:AUTO:RESUltS:RAMP5:ZOOM?
```

```
TESTs:AUTO:RESults:RAMP6:ZOOM ON|OFF|1|0
TESTs:AUTO:RESults:RAMP6:ZOOM?
```

This command activates the zooming function of the Power Ramp graph for each of the six measurements. The choices are ON (1) and OFF (0). If set to ON, the rising and trailing edges are expanded. At preset, these are set to OFF.

### Power Ramp Marker Measurement

```
TESTs:AUTO:RESults:RAMP1:MARKer?
TESTs:AUTO:RESults:RAMP2:MARKer?
TESTs:AUTO:RESults:RAMP3:MARKer?
TESTs:AUTO:RESults:RAMP4:MARKer?
TESTs:AUTO:RESults:RAMP5:MARKer?
TESTs:AUTO:RESults:RAMP6:MARKer?
```

This query command returns a set of marker position values, <string 1>, <string 2>, <string 3> and <string 4>, in the Power Ramp graph for each of the six measurements.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (7 digits) is the marker position ranging from -009.25 to +156.25 (bits).
- <string 4> (5 digits) is the power level of the marker position ranging from -99.9 to +99.9 (dB). If any measurement is overranged, underranged or not made, the value -99.9 is returned.

### Power Ramp Marker Position Control

```
TESTs:AUTO:RESults:RAMP1:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:RAMP1:MARKer:POINT <real>
TESTs:AUTO:RESults:RAMP1:MARKer:POINT?

TESTs:AUTO:RESults:RAMP2:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:RAMP2:MARKer:POINT <real>
TESTs:AUTO:RESults:RAMP2:MARKer:POINT?

TESTs:AUTO:RESults:RAMP3:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:RAMP3:MARKer:POINT <real>
TESTs:AUTO:RESults:RAMP3:MARKer:POINT?

TESTs:AUTO:RESults:RAMP4:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:RAMP4:MARKer:POINT <real>
TESTs:AUTO:RESults:RAMP4:MARKer:POINT?

TESTs:AUTO:RESults:RAMP5:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:RAMP5:MARKer:POINT <real>
TESTs:AUTO:RESults:RAMP5:MARKer:POINT?
```

```
TESTs:AUTO:RESults:RAMP6:MARKer:POINT UP|DOWN  
TESTs:AUTO:RESults:RAMP6:MARKer:POINT <real>  
TESTs:AUTO:RESults:RAMP6:MARKer:POINT?
```

This command enables you to move the marker UP or DOWN in steps, or by <real> bits ranging from -9.25 to +156.25 (bits) when the zoom function is set to off, or from -8.0 to +2.0 (bits) and from 145.00 to +155.00 (bits) when the zoom function is set to on, in the Power Ramp graph for each of the six measurements.

### Power Ramp Test

```
TESTs:AUTO:RESults:RAMP1?  
TESTs:AUTO:RESults:RAMP2?  
TESTs:AUTO:RESults:RAMP3?  
TESTs:AUTO:RESults:RAMP4?  
TESTs:AUTO:RESults:RAMP5?  
TESTs:AUTO:RESults:RAMP6?
```

This query command returns a set of test result values, <string 1> and <string 2>, for each of the six measurements of Power Ramp.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.

## Command Reference for DC Current Measurement Screen

Send the "DISPlay:AUTO:CURRent" command to display the DC Current measurement screen for AUTOMATIC TEST before sending the following commands.

### DC Current Measurement

```
TESTs:AUTO:RESults:CURRent1?  
TESTs:AUTO:RESults:CURRent2?  
TESTs:AUTO:RESults:CURRent3?  
TESTs:AUTO:RESults:CURRent4?  
TESTs:AUTO:RESults:CURRent5?  
TESTs:AUTO:RESults:CURRent6?
```

This query command returns a set of test result values, <string 1>, <string 2>, <string 3> and <string 4>, for each of the six measurements of DC Current .

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary coded decimal for the pass/fail results as follows:

bit 0 (1): Pass/Fail result for DC Current at Camp On

bit 1 (2): Pass/Fail result for DC Current at Talk

The choices for each bit are 1 for Fail and 0 for Pass.

- <string 3> (5 digits) and <string 4> (5 digits) are the measured data ranging from 0.000 to 1.000 (A) at Camp On and Talk. If any measurement is overranged, underranged or not made, the value 2.5 (A) is returned.

## Command Reference for MS Information

### MS Information

TESTs:AUTO:RESults:MSINformation:IMSI?

This query command returns the IMSI string up to 15 letters.

TESTs:AUTO:RESults:MSINformation:IMEI?

This query command returns the IMEI string up to 15 letters.

TESTs:AUTO:RESults:MSINformation:DIAL?

This query command returns the dialed number string up to 20 digits.

TESTs:AUTO:RESults:MSINformation:PClass?

This query command returns a 1-digit power class string value.

TESTs:AUTO:RESults:MSINformation:GVersion?

This query command returns the 1-digit version number of GSM mobile under test.

## Command Reference for Peak TX Power Measurement Screen

Send the "DISPlay:AUTO:TPOWer" command to display the Peak TX Power measurement screen for AUTOMATIC TEST before sending the following commands.

### Peak TX Power Measurement

TESTs:AUTO:RESults:TPOWer1?

TESTs:AUTO:RESults:TPOWer2?

TESTs:AUTO:RESults:TPOWer3?

TESTs:AUTO:RESults:TPOWer4?

TESTs:AUTO:RESults:TPOWer5?

TESTs:AUTO:RESults:TPOWer6?

These query commands return a set of test result values, <string 1>, <string 2>, <string 3>, <string 4>, and <string 5>, for each of the six measurements of Peak TX Power.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary coded decimal ranging from 0 to 7 for the pass/fail results as follows:

bit 0 (1): Pass/Fail result for Peak TX Power High

bit 1 (2): Pass/Fail result for Peak TX Power Medium

bit 2 (4): Pass/Fail result for Peak TX Power Low

The choices for each bit are 1 for Fail and 0 for Pass.

- <string 3> (5 digits), <string 4> (5 digits), and <string 5> (5 digits) are the High, Medium, and Low ranges measured data ranging from –99.9 to + 99.9 in dBm. If any measurement is overranged, underranged or not made, the value –99.9 is returned.

## Command Reference for Phase/Frequency Error Measurement Screen

Send the "DISPlay:AUTO:PHASe" command to display the Phase Error/Frequency Error measurement screen for AUTOMATIC TEST before sending the following commands.

### Frequency Error Measurement

```
TESTs:AUTO:RESults:FREQuency1?  
TESTs:AUTO:RESults:FREQuency2?  
TESTs:AUTO:RESults:FREQuency3?  
TESTs:AUTO:RESults:FREQuency4?  
TESTs:AUTO:RESults:FREQuency5?  
TESTs:AUTO:RESults:FREQuency6?
```

This query command returns a set of test result values, <string 1>, <string 2> and <string 3>, for each of the six measurements of Frequency Error.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (5 digits) is the measured data ranging from –0999 to +0999 (Hz). If any measurement is overranged, underranged or not made, the value +9999 is returned.

### Phase Error Marker Measurement

```
TESTs:AUTO:RESults:PHASe1:MARKer?  
TESTs:AUTO:RESults:PHASe2:MARKer?  
TESTs:AUTO:RESults:PHASe3:MARKer?  
TESTs:AUTO:RESults:PHASe4:MARKer?  
TESTs:AUTO:RESults:PHASe5:MARKer?  
TESTs:AUTO:RESults:PHASe6:MARKer?
```

This query command returns a set of marker position values, <string 1>, <string 2>, <string 3> and <string 4>, in the Phase Error graph for each of the six measurements.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.

- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (6 digits) is the marker position ranging from 000.00 to 147.00 in bits.
- <string 4> (5 digits) is the measured error ranging from -99.9 to +99.9 in ° (degree). If its measurement is overranged, underranged or not made, the value +99.9 is returned.

### Phase Error Marker Position Control

```
TESTs:AUTO:RESults:PHASe1:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:PHASe1:MARKer:POINT <real>
TESTs:AUTO:RESults:PHASe1:MARKer:POINT?

TESTs:AUTO:RESults:PHASe2:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:PHASe2:MARKer:POINT <real>
TESTs:AUTO:RESults:PHASe2:MARKer:POINT?

TESTs:AUTO:RESults:PHASe3:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:PHASe3:MARKer:POINT <real>
TESTs:AUTO:RESults:PHASe3:MARKer:POINT?

TESTs:AUTO:RESults:PHASe4:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:PHASe4:MARKer:POINT <real>
TESTs:AUTO:RESults:PHASe4:MARKer:POINT?

TESTs:AUTO:RESults:PHASe5:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:PHASe5:MARKer:POINT <real>
TESTs:AUTO:RESults:PHASe5:MARKer:POINT?

TESTs:AUTO:RESults:PHASe6:MARKer:POINT UP|DOWN
TESTs:AUTO:RESults:PHASe6:MARKer:POINT <real>
TESTs:AUTO:RESults:PHASe6:MARKer:POINT?
```

This command enables you to move the marker UP or DOWN in steps, or by <real> bits ranging from 0.0 to 147.0 bits, in the Phase Error graph for each of the six measurements. At preset, these are set to 0.25 (bits).

### Phase Error Measurement

```
TESTs:AUTO:RESults:PHASe1?
TESTs:AUTO:RESults:PHASe2?
TESTs:AUTO:RESults:PHASe3?
TESTs:AUTO:RESults:PHASe4?
TESTs:AUTO:RESults:PHASe5?
TESTs:AUTO:RESults:PHASe6?
```

This query command returns a set of test result values, <string 1>, <string 2>, <string 3>, and <string 4>, for each of the six measurements of Peak and RMS Phase Error.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.

- <string 2> (1 digit) is the binary coded decimal ranging from 0 to 3 for the pass/fail results as follows:  
bit 0 (1): Pass/Fail result for RMS Phase Error  
bit 1 (2): Pass/Fail result for Peak Phase Error  
The choices for each bit are 1 for Fail and 0 for Pass.
- <string 3> (4 digits) and <string 4> (4 digits) are the measured rms/peak error data ranging from 00.0 to 99.9 in ° (degrees). If any measurement is overranged, underranged or not made, the value 99.9 is returned.

## Command Reference for Sensitivity/RX Quality/RX Level Measurement Screen

Send the "DISPlay:AUTO:SENSitivity" command to display the Sensitivity/RX Quality/RX Level screen for AUTOMATIC TEST before sending the following commands.

### RX Level Measurement

```
TESTs:AUTO:RESults:LEVel1?
TESTs:AUTO:RESults:LEVel2?
TESTs:AUTO:RESults:LEVel3?
TESTs:AUTO:RESults:LEVel4?
TESTs:AUTO:RESults:LEVel5?
TESTs:AUTO:RESults:LEVel6?
```

This query command returns a set of test result values, <string 1>, <string 2> and <string 3>, for each of the six measurements of RX Level.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (2 digits) is the measured data corresponding to one of the RX Level factors as follows:

Factor:	00	01	...	62	63
RX Level: [dBm]	<-110	-110 to -109	...	-49 to -48	>-48

If any measurement is overranged, underranged or not made, the value 63 is returned.

### RX Quality Measurement

```
TESTs:AUTO:RESults:QUALity1?
TESTs:AUTO:RESults:QUALity2?
TESTs:AUTO:RESults:QUALity3?
```

```
TESTs:AUTO:RESUltS:QUALity4?
TESTs:AUTO:RESUltS:QUALity5?
TESTs:AUTO:RESUltS:QUALity6?
```

This query command returns a set of test result values, <string 1>, <string 2> and <string 3>, for each of the six measurements of RX Quality.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (1 digit) is the measured data corresponding to one of the RX Quality factors as follows:

Factor:	0	1	...	6	7
RX Quality: [%]	<0.2	0.2 to 0.4	...	6.4 to 12.8	>12.8

If any measurement is overranged, underranged or not made, the value 7 is returned.

### Sensitivity Measurement

```
TESTs:AUTO:RESUltS:SENSitivity1?
TESTs:AUTO:RESUltS:SENSitivity2?
TESTs:AUTO:RESUltS:SENSitivity3?
TESTs:AUTO:RESUltS:SENSitivity4?
TESTs:AUTO:RESUltS:SENSitivity5?
TESTs:AUTO:RESUltS:SENSitivity6?
```

This query command returns a set of test result values, <string 1>, <string 2>, <string 3> and <string 4>, for each of the six measurements of Sensitivity.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary coded decimal ranging from 0 to 3 for the pass/fail results as follows:

bit 0 (1): Pass/Fail result for Sensitivity BER (bit error rate)

bit 1 (2): Pass/Fail result for Sensitivity FER (frame error rate)

The choices for each bit are 1 for Fail and 0 for Pass.

- <string 3> (5 digits) and <string 4> (5 digits) are the measured BER and FER data ranging from 00.00 to 99.99 in %. If any measurement is overranged, underranged or not made, the value 99.99 is returned.



## Command Reference for Stand-by/Measuring Screens

The following commands are used to set the controls and parameters associated with the initial test condition for the Stand-by/Measuring screens. The query commands return the settings of those controls and parameters.

Send the "DISPlay:AUTO:STBY" command to display the AUTOMATIC TEST: Stand-by screen before sending the following commands.

### 6 Measurement DCP Variable

```
TESTs:AUTO:VARiable:DCP:VOLT1 <real> [V]  
TESTs:AUTO:VARiable:DCP:VOLT1?
```

```
TESTs:AUTO:VARiable:DCP:VOLT2 <real> [V]  
TESTs:AUTO:VARiable:DCP:VOLT2?
```

```
TESTs:AUTO:VARiable:DCP:VOLT3 <real> [V]  
TESTs:AUTO:VARiable:DCP:VOLT3?
```

```
TESTs:AUTO:VARiable:DCP:VOLT4 <real> [V]  
TESTs:AUTO:VARiable:DCP:VOLT4?
```

```
TESTs:AUTO:VARiable:DCP:VOLT5 <real> [V]  
TESTs:AUTO:VARiable:DCP:VOLT5?
```

```
TESTs:AUTO:VARiable:DCP:VOLT6 <real> [V]  
TESTs:AUTO:VARiable:DCP:VOLT6?
```

These commands set the Variable field to DC Power and specify the six voltage values at which the six measurements are to be made. These measurements are made at one fixed traffic channel. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. The value 99.9 causes the DCP test to be skipped (---- shown in the table cell). At preset, these are set to 3.0 (V).

### 6 Measurement TCH Variable

```
TESTs:AUTO:VARiable:TCH:CHANnel1 <int>  
TESTs:AUTO:VARiable:TCH:CHANnel1?
```

```
TESTs:AUTO:VARiable:TCH:CHANnel2 <int>  
TESTs:AUTO:VARiable:TCH:CHANnel2?
```

```
TESTs:AUTO:VARiable:TCH:CHANnel3 <int>  
TESTs:AUTO:VARiable:TCH:CHANnel3?
```

```
TESTs:AUTO:VARiable:TCH:CHANnel4 <int>  
TESTs:AUTO:VARiable:TCH:CHANnel4?
```

```
TESTs:AUTO:VARiable:TCH:CHANnel5 <int>  
TESTs:AUTO:VARiable:TCH:CHANnel5?
```

```
TESTs:AUTO:VARiable:TCH:CHANnel6 <int>  
TESTs:AUTO:VARiable:TCH:CHANnel6?
```

These commands set the Variable field to TCH (Traffic Channel) and specify the six channel numbers at which the six measurements are to be made, for each of the radio standards in conjunction with the Multi Band settings. These measurements are made at one fixed voltage of DC Power. The value 9999 causes the TCH test to be skipped (---- shown in the table cell). The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1, 62, 124
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1, 62, 124
	OFF	0 to 124 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512, 699, 885
	E-GSM	512 to 885; 0 to 124 975 to 1023	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512, 661, 810

## BCCH

TESTs:AUTO:BCCH <int>  
TESTs:AUTO:BCCH?

This command specifies the number of Broadcast Control Channel for each radio standard set by the Radio Format commands. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	20
E-GSM	0 to 124, 975 to 1023	20
DCS1800	512 to 885	698
PCS1900	512 to 810	698

## DC Power Mode

TESTs:AUTO:DCPower:MODE AUTO|ON|OFF  
TESTs:AUTO:DCPower:MODE?

This command defines a supply mode of DC Power. The choices are AUTO, ON, and OFF. At preset, this is set to OFF.

- If set to AUTO, DC Power is supplied during a measurement cycle or until a measurement is aborted.
- If set to ON, DC Power is always supplied.
- If set to OFF, DC Power is not supplied and the variable of the six measurements is automatically set to TCH.

### DC Power Voltage

```
TESTs:AUTO:DCPower:VOLT <real> [V]  
TESTs:AUTO:DCPower:VOLT?
```

This command specifies a voltage value of DC Power. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

### Multi Band

```
TESTs:AUTO:MBAND DCS1800|OFF  
TESTs:AUTO:MBAND?
```

This command specifies whether or not to include the multi-band mobile tests for DCS1800 when GSM900 or E-GSM is specified by the Radio Format command.

```
TESTs:AUTO:MBAND GSM900|E-GSM|OFF  
TESTs:AUTO:MBAND?
```

This command specifies whether or not to include the multi-band mobile tests for GSM900 or E-GSM when DCS1800 is specified by the Radio Format command.

If PCS1900 is specified with the Radio Format command, the Multi Band command is automatically disabled (set to OFF).

### Radio Standard

```
TESTs:AUTO:RFormat GSM900|E-GSM|DCS1800|PCS1900  
TESTs:AUTO:RFormat?
```

This command defines a system of Radio Standard to be tested. The choices are GSM900, E-GSM, DCS1800, and PCS1900. If PCS1900 is selected, the Multi Band command is automatically set to OFF. At preset, this is set to GSM900.

### Screen Mode

```
TESTs:AUTO:SCREen SIMPlified|DETAiled
```

This command selects the screen mode. The choices are SIMPlified screen and the DETailed screen. At preset, this value is set to SIMP.

### Signaling State

```
TESTs:AUTO:MEASure:SIGNaling:STATE?
```

This query command returns a 9-bit binary coded decimal corresponding to the test flow steps executed for a test cycle as follows:

bit 0 (1): LOC. Update

bit 1 (2): 1st Call

bit 2 (4): Talk

bit 3 (8): RF Test

bit 4 (16): 1st Release

bit 5 (32): 2nd Call

bit 6 (64): 2nd Release

bit 7 (128): Measurement end with test result

bit 8 (256): Measurement end without test result (Aborted or Time out error occurred)

### Talk Test Result

TESTs:AUTO:MEASure:TALK PASS|FAIL

This command verifies whether the test result of the Talk step passes or fails. The choices are PASS and FAIL. There is no query form of this command.

### Talk Test TCH

TESTs:AUTO:TCH <int>

TESTs:AUTO:TCH?

This command specifies the channel number of Traffic Channel for Talk tests, for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	1
E-GSM	0 to 124, 975 to 1023	1
DCS1800	512 to 885	512
PCS1900	512 to 810	512

---

## TESTs Subsystem for MANUAL TEST

This function allows you to execute real time measurements. Depending on the combination of the options installed with the Test Set, the different measurement modes are available as follows:

Option	Available Measurement Mode
<none>	SYNC (Synchronous)
002	SYNC, ASYNC (Asynchronous)
040	SYNC, GPRS
002, 040	SYNC, ASYNC, GPRS

---

**NOTE** For Test Sets with Option 002, the DC Power voltage setting done in this function are copied to the AUTOMATIC TEST, SIGNAL GENERATOR and SPECTRUM MONITOR and vice versa.

---

### Command Reference for DC Current Measurement Screen

The Current commands are used to set the controls and parameters associated with the DC Current measurements and the pass/fail tests.

Send the "DISPlay:MANual:CURRent" command to display the DC Current measurement screen for MANUAL TEST before sending the following commands.

#### DC Current Measurement (ASYNC or GPRS mode)

TESTs:MANual:CURRent:RESults?

This query command returns a set of test result values, <string 1>, <string 2> and <string 3>, for asynchronous or GPRS mode tests of DC Current (without titling Camp On nor Talk).

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result using the low and high limits for Talk.
- <string 3> (5 digits) is the measured dc current data ranging from 0.000 to 1.000 (A). If any measurement is overranged, underranged or not made, the value 2.500 is returned.

---

**NOTE** This command is valid only for Test Sets *with* Option 002 and Option 040.

---

## DC Current Measurement at Camp On

TESTs:MANual:CURRent:RESults:CAMP?

This query command returns a set of test result values, <string 1>, <string 2>, <string 3>, and <string 4>, for synchronous mode Camp On tests of DC Current.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result using the low and high limits for Camp On.
- <string 3> (5 digits) and <string 4> (5 digits) are the measured dc current data ranging from 0.000 to 1.000 (A). If any measurement is overranged, underranged or not made, the value 2.500 is returned.

**NOTE** This command is valid if the mode is set to SYNC.

## DC Current Measurement at Talk

TESTs:MANual:CURRent:RESults:TALK?

This query command returns a set of test result values, <string 1>, <string 2>, <string 3>, and <string 4>, for synchronous mode Talk tests of DC Current.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result using the low and high limits for Talk.
- <string 3> (5 digits) and <string 4> (5 digits) are the measured current data ranging from 0.000 to 1.000 (A). If any measurement is overranged, underranged or not made, the value 2.500 is returned.

**NOTE** This command is valid if the mode is set to SYNC.

## DC Power Voltage

TESTs:MANual:CURRent:DCPower:VOLT <real> [V]  
TESTs:MANual:CURRent:DCPower:VOLT?

This command specifies a voltage value of DC Power when the DC Power supply mode in the Stand-by screen is set to ON. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

## Power Control Level

TESTs:MANual:CURRent:PLEVel <int>  
TESTs:MANual:CURRent:PLEVel?

This command specifies a value of Power Control Level for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+30 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+30 dBm)

### Traffic Channel

TESTs:MANual:CURRent:CHANnel <int>  
TESTs:MANual:CURRent:CHANnel?

This command specifies the channel number of Traffic Channel for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1
	OFF	0 to 124 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512
	E-GSM	512 to 885; 975 to 1023 0 to 124	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512

### Traffic Channel Frequency

TESTs:MANual:CURRent:FREQuency  
<real> [HZ|KHZ|MHZ|MAHZ]  
TESTs:MANual:CURRent:FREQuency?

This command specifies the frequency of Traffic Channel for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBANd	Allowable Range [Hz]	Preset Value [Hz]
GSM900	DCS1800	890200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	890200000 to 914800000	
E-GSM	DCS1800	880200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	880200000 to 914800000	
DCS1800	GSM900	1710200000 to 1784800000; 890200000 to 914800000	1710200000
	E-GSM	1710200000 to 1784800000; 880200000 to 914800000	
	OFF	1710200000 to 1784800000	
PCS1900	OFF	1850200000 to 1909800000	1850200000

## Command Reference for Measuring Screens

These commands are used to set the controls and parameters associated with an initial test condition.

Send the "DISPlay:MANual:MEASure" command to display the Measuring for MANUAL TEST before sending the following commands.

### BS Call

TESTs:MANual:MEASure:BSCall

This command executes a call setup to the mobile from the Test Set. There is no query form of this command.

**NOTE** If Option 002 and Option 040 are installed and the mode is set to ASYNC or GPRS, this command is invalid.

### BS Level

TESTs:MANual:MEASure:AMPLitude <real> [dBm]  
TESTs:MANual:MEASure:AMPLitude?

This command specifies an amplitude of BS Level in the Measuring screen. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -50.0 (dBm).



## BS Release

TESTs:MANual:MEASure:BSRelease

This command releases the mobile from the Test Set. There is no query form of this command.

---

**NOTE** If Option 002 and Option 040 are installed and the mode is set to ASYNC or GPRS, this command is invalid.

---

## DC Power Voltage

TESTs:MANual:MEASure:DCPower:VOLT <real> [V]  
TESTs:MANual:MEASure:DCPower:VOLT?

This command specifies a voltage value of DC Power if the DC Power supply mode in the Stand-by screen is set to ON. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

## GPRS Test End

TESTs:MANual:MEASure:END

This command terminates measurements in the GPRS mode and returns to the Stand-by screen. There is no query form of this command.

---

**NOTE** If the mode is set to SYNC on the Test Set with Option 040, this command is invalid.

---

## Midamble

TESTs:MANual:MEASure:MIDamble  
NONE | TSC0 | TSC1 | TSC2 | TSC3 | TSC4 | TSC5 | TSC6 | TSC7  
TESTs:MANual:MEASure:MIDamble?

This command specifies a value of Training Sequence Code (TSC), TSC0 to TSC7, or NONE for the amplitude trigger. At preset, this is set to TSC5.

---

**NOTE** For Test Sets *without* Option 002, or if the mode is set to SYNC, this command is invalid.

For Test Sets with Option 040, if the mode is set to GPRS, this command is invalid.

---

## MS Call

TESTs:MANual:MEASure:MSCall

This command executes a call from the mobile. There is no query form of this command.

---

**NOTE** For Test Sets with Option 002, if the mode is set to ASYNC, this command is invalid.

For Test Sets with Option 040, if the mode is set to GPRS, this command is invalid.

---

## MS Release

TESTs:MANual:MEASure:MSRelease

This command executes a release from the mobile. There is no query form of this command.

---

**NOTE** For Test Sets with Option 002, if the mode is set to ASYNC, this command is invalid.

For Test Sets with Option 040, if the mode is set to GPRS, this command is invalid.

---

## MS Signal

TESTs:MANual:MEASure:SIGNAL BURST|CW

TESTs:MANual:MEASure:SIGNAL?

For Test Sets with Option 002, this command defines a signaling type from the mobile when in the asynchronous mode. The choices are BURST and CW. At preset, this is set to BURST.

---

**NOTE** For Test Sets *without* Option 002, this is fixed to Burst.

---

## Power Control Level

TESTs:MANual:MEASure:PLEvel <int>

TESTs:MANual:MEASure:PLEvel?

This command specifies a value of Power Control Level for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+30 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+30 dBm)

### Signaling State (GPRS mode)

TESTs:MANual:MEASure:SIGNaling:STATe?

This query command returns a value, <string>, corresponding to the test flow steps executed for a test cycle for the GPRS mode as follows:

- bit 0 (1): Idle
- bit 1 (2): Attached
- bit 2 (4): Connect
- bit 3 (8): Time Out Error
- bit 4 (16): Measurement End

The choices for each bit are 1 for executed and 0 for not.

---

**NOTE** If the mode is set to SYNC on the Test Set with Option 040, this command is invalid.

---

### Signaling State (SYNC mode)

TESTs:MANual:MEASure:SIGNaling:STATe?

This query command returns a value, <string>, corresponding to the test flow steps executed for a test cycle as follows:

- bit 0 (1): MS Call/BS Call
- bit 1 (2): Talk/Rf Test
- bit 2 (4): MS Release/BS Release
- bit 3 (8): Time Out Error
- bit 4 (16): Measurement End

The choices for each bit are 1 for executed and 0 for not.

---

**NOTE** For Test Sets with Option 002, if the mode is set to ASYNC, this command is invalid.

If the mode is set to GPRS on the Test Set with Option 040, this command is invalid.

---

### Slot Configuration

TESTs:MANual:MEASure:SCONfigure 1x1|2x1

This command specifies the slot combination for downlink and uplink, respectively, in the Measuring screen for the GPRS mode, in conjunction with the Slot Measured setting. The combinations of the slot configuration and the slot order measured are as follows:

Option	Slot Configuration	Slot Order Measured
040	Downlink 1 × Uplink 1	4
040	2 × 1	4

At preset, this is set to 1 × 1.

**NOTE** If the mode is set to GPRS on the Test Set *with* Option 040, this command is valid.

### Slot Measured

TESTs:MANual:MEASure:MSLot 4

This command specifies the order of slot to be measured, in the Measuring screen for the GPRS mode, in conjunction with the Slot Configuration setting. The combinations of the slot order measured and the slot configuration are as follows:

Option	Slot Configuration	Slot Order Measured
040	D 1 × U 1	4 (fourth)
040	2 × 1	4 (fourth)

At preset, this is set to 4.

**NOTE** As the slot order measured is fixed to 4 when the mode is set to GPRS on the Test Set with Option 040, this command is invalid.

### Timing Advance

TESTs:MANual:MEASure:TADVance <integer>

TESTs:MANual:MEASure:TADVance?

This command specifies the number of bits for Timing Advance. The allowable range is from 0 to 63 (bits).

**NOTE** For Test Sets with Option 002, if the mode is set to SYNC, this command is valid.

For Test Sets with Option 002 and Option 040, if the mode is set to SYNC or GPRS, this command is valid.

## Traffic Channel

TESTs:MANual:MEASure:TCH:CHANnel <int>  
TESTs:MANual:MEASure:TCH:CHANnel?

This command specifies the channel number of Traffic Channel (TCH) to be tested for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1
	OFF	0 to 124 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512
	E-GSM	512 to 885; 975 to 1023 0 to 124	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512

## Traffic Channel Frequency

TESTs:MANual:TCH:FREQuency <real> [HZ|KHZ|MHZ|MAHZ]  
TESTs:MANual:TCH:FREQuency?

This command specifies the frequency of Traffic Channel (TCH) to be tested, for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range [Hz]	Preset Value [Hz]
GSM900	DCS1800	890200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	890200000 to 914800000	
E-GSM	DCS1800	880200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	880200000 to 914800000	

RFormat	MBAND	Allowable Range [Hz]	Preset Value [Hz]
DCS1800	GSM900	1710200000 to 1784800000; 890200000 to 914800000	1710200000
	E-GSM	1710200000 to 1784800000; 880200000 to 914800000	
	OFF	1710200000 to 1784800000	
PCS1900	OFF	1850200000 to 1909800000	1850200000

## Command Reference for MS Information

### MS Information

TESTs:MANual:RESults:MSINformation:IMSI?

This query command returns the IMSI string of 15 letters.

TESTs:MANual:RESults:MSINformation:IMEI?

This query command returns the IMEI string of 15 letters.

TESTs:MANual:RESults:MSINformation:DIAL?

This query command returns the 20-digit dialed number string.

TESTs:MANual:RESults:MSINformation:PClass?

This query command returns a 1-digit power class string.

TESTs:MANual:RESults:MSINformation:GVersion?

This query command returns a 1-digit version number of the GSM mobile under test.

**NOTE** For Test Sets with Option 002, if the mode is set to ASYNC, these commands are invalid.

For Test Sets with Option 040, if the mode is set to GPRS, the commands for DIAL and GVersion are invalid.

## Command Reference for Peak TX Power /Burst Timing/Power Ramp Measurement Screen

The TPOWer and TXAMplitude commands are used to set or read the controls and parameters associated with the Peak TX Power/Burst Timing/Power Ramp measurements and the pass/fail tests.

Send the "DISPlay:MANual:TPOWer" command to display the Peak TX Power/Burst Timing/Power Ramp screen for MANUAL TEST before sending the following commands.

---

**NOTE** For Test Sets with Option 040, if the mode is set to GPRS, this measurement screen is titled as Peak TX Power/Power vs Time.

---

### Actual Timing Advance

TESTs:MANual:TXAMplitude:ACTAdvance?

This command queries the value of Actual Timing Advance.

---

**NOTE** For Test Sets with Option 002, if the mode is set to SYNC, this command is valid.

For Test Sets with Option 002 and Option 040, if the mode is set to SYNC or GPRS, this command is valid.

---

### Averaging Function

TESTs:MANual:TPOWer:AVERAge OFF | <int>  
TESTs:MANual:TPOWer:AVERAge?

This command defines whether or not to activate the averaging function. The choices are OFF and <int> for averaging time. The allowable range is from 2 to 99. At preset, this is set to OFF.

### BS Level

TESTs:MANual:TPOWer:AMPLitude <real> [dBm]  
TESTs:MANual:TPOWer:AMPLitude?

This command specifies an amplitude of BS Level. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -50.0 (dBm).

### Burst Timing Measurement

TESTs:MANual:TXAMplitude:RESults:BTIMing?

This query command returns a set of values, <string 1>, <string 2> and <string 3>, for Burst Timing tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (4 digits) is the measured timing value in bits ranging from -9.9 to +9.9. If its measurement is overranged, underranged or not made, the value -9.9 is returned.

### DC Power Voltage

TESTs:MANual:TPOWer:DCPower:VOLT <real> [V]  
TESTs:MANual:TPOWer:DCPower:VOLT?

This command specifies a voltage value of DC Power when the DC Power supply mode in the Stand-by screen is set to ON. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

### Midamble

```
TESTs:MANual:TPOWer:MIDamble
NONE | TSC0 | TSC1 | TSC2 | TSC3 | TSC4 | TSC5 | TSC6 | TSC7
TESTs:MANual:TPOWer:MIDamble?
```

This command specifies a value of Training Sequence Code (TSC), TSC0 to TSC7, or NONE for the amplitude trigger. At preset, this is set to TSC5.

**NOTE** For Test Sets *without* Option 002 or if the mode is set to SYNC, this command is invalid.

For Test Sets *with* Option 040, if the mode is set to GPRS, this command is invalid.

### Peak TX Power Measurement

```
TESTs:MANual:TXAMplitude:REsults:TPOWer?
```

This query command returns a set of values, <string 1>, <string 2> and <string 3>, for Peak TX Power tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (5 digits) is the measured power level in dBm ranging from -99.9 to +99.9. If its measurement is overranged, underranged or not made, the value -99.9 is returned.

### Power Control Level

```
TESTs:MANual:TPOWer:PLEvel <int>
TESTs:MANual:TPOWer:PLEvel?
```

This command specifies a value of Power Control Level for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFORmat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)



RFormat	Allowable Range	Preset Value
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+30 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+30 dBm)

## Power Ramp Graph Zoom

TESTs:MANual:TXAMplitude:RESults:ZOOM ON|OFF|0|1  
TESTs:MANual:TXAMplitude:RESults:ZOOM?

This command defines whether or not to activate the zooming function. The choices are ON (1) and OFF (0). At preset, this is set to OFF.

## Power Ramp Marker Measurement

TESTs:MANual:TXAMplitude:RESults:MARKer?

This query command returns a set of marker position values, <string 1>, <string 2>, <string 3>, and <string 4>, for Power Ramp tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (7 digits) is the marker position in bits ranging from –009.25 to +156.25 when the zoom function is set to off, or from –008.00 to +002.00 and +145.00 to +155.00 when the zoom function is set to on.
- <string 4> (5 digits) is the power level at the marker position, in dB ranging from –99.9 to +99.9. If its measurement is overranged, underranged or not made, the value –99.9 is returned.

## Power Ramp Marker Position Control

TESTs:MANual:TXAMplitude:RESults:MARKer:POINT UP|DOWN  
TESTs:MANual:TXAMplitude:RESults:MARKer:POINT <real>  
TESTs:MANual:TXAMplitude:RESults:MARKer:POINT?

This command enables you to move the marker position UP or DOWN in steps, or by <real> in bits ranging from –9.25 to 156.25 when the zoom function is set to off, or from –8.00 to –2.00 and 145.00 to 155.00 when the zoom function is set to on. At preset, this is set to 0.25 (bits).

## Power Ramp Test

TESTs:MANual:TXAMplitude:RESults:RAMP?

This query command returns a set of Power Ramp pass/fail result values, <string 1> and <string 2>.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.

### Timing Advance

TESTs:MANual:TXAMplitude:TADVance <integer>  
TESTs:MANual:TXAMplitude:TADVance?

This command specifies a value of Timing Advance. The allowable range is from 0 to 63 (bits).

**NOTE** For Test Sets with Option 002, if the mode is set to SYNC, this command is valid.

### Traffic Channel

TESTs:MANual:TPOWer:CHANnel <int>  
TESTs:MANual:TPOWer:CHANnel?

This command specifies the channel number of Traffic Channel (TCH) to be tested for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1
	OFF	0 to 124 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512
	E-GSM	512 to 885; 975 to 1023 0 to 124	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512

### Traffic Channel Frequency

TESTs:MANual:TPOWer:FREQuency  
<real> [HZ|KHZ|MHZ|MAHZ]  
TESTs:MANual:TPOWer:FREQuency?

This command specifies the frequency of Traffic Channel (TCH) to be tested, for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFORmat	MBANd	Allowable Range [Hz]	Preset Value [Hz]
GSM900	DCS1800	890200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	890200000 to 914800000	
E-GSM	DCS1800	880200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	880200000 to 914800000	
DCS1800	GSM900	1710200000 to 1784800000; 890200000 to 914800000	1710200000
	E-GSM	1710200000 to 1784800000; 880200000 to 914800000	
	OFF	1710200000 to 1784800000	
PCS1900	OFF	1850200000 to 1909800000	1850200000

## Command Reference for Phase/Frequency Error Measurement Screen

The PHASe commands are used to set the controls and parameters associated with the Phase Error and Frequency Error measurements and the pass/fail tests.

Send the "DISPlay:MANual:PHASe" command to display the Phase Error/Frequency Error Measurement screen for MANUAL TEST before sending the following commands.

### Averaging Function

```
TESTs:MANual:PHASe:AVERAge OFF|<int>
TESTs:MANual:PHASe:AVERAge?
```

This command defines whether or not to activate the averaging function. The choices are OFF and <int> for averaging time. The allowable range of <int> is from 2 to 99. At preset, this is set to OFF.

### BS Level

```
TESTs:MANual:PHASe:AMPLitude <real> [dBm]
TESTs:MANual:PHASe:AMPLitude?
```

This command specifies an amplitude of BS Level. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -50.0 (dBm).

## DC Power Voltage

```
TESTs:MANual:PHASe:DCPower:VOLT <real> [V]
TESTs:MANual:PHASe:DCPower:VOLT?
```

This command specifies a voltage value of DC Power when the DC Power supply mode in the Stand-by screen is set to ON. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

## Frequency Error Measurement

```
TESTs:MANual:TXFrequency:RESults:FREquency?
```

This query command returns a set of values, <string 1>, <string 2> and <string 3>, for Frequency Error tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (5 digits) is the measured frequency error in Hz ranging from –9999 to +9999. If its measurement is overranged, underranged or not made, the value +9999 is returned.

## Midamble

```
TESTs:MANual:PHASe:MIDamble
NONE | TSC0 | TSC1 | TSC2 | TSC3 | TSC4 | TSC5 | TSC6 | TSC7
TESTs:MANual:PHASe:MIDamble?
```

This command specifies a value of Training Sequence Code (TSC), TSC0 to TSC7, or NONE for the amplitude trigger. At preset, this is set to TSC5.

**NOTE** For Test Sets *without* Option 002 or if the mode is set to SYNC, this command is invalid.

## Phase Error Marker Measurement

```
TESTs:MANual:TXFrequency:RESults:MARKer?
```

This query command returns a set of values, <string 1>, <string 2>, <string 3>, and <string 4>, for the marker positions in the Phase error graph.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (6 digits) is the marker position ranging from 000.00 to 147.00 bits.
- <string 4> (5 digits) is the measured Phase error ranging from –99.9 to +99.9 in ° (degrees). If its measurement is overranged, underranged or not made, the value +99.9 is returned.

## Phase Error Marker Position Control

```
TESTs:MANual:TXFrequency:RESults:MARKer:POINT UP|DOWN  
TESTs:MANual:TXFrequency:RESults:MARKer:POINT <real>  
TESTs:MANual:TXFrequency:RESults:MARKer:POINT?
```

This command enables you to move the marker position Up or Down in steps, or by <real> bits ranging from 0.0 to 147.0 in bits.

## Phase Error Measurement

```
TESTs:MANual:TXFrequency:RESults:PHASe?
```

This query command returns a set of values, <string 1>, <string 2>, <string 3> and <string 4>, for Phase Error tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary coded decimal ranging from 0 to 3 for the pass/fail results as follows:

bit 0 (1): Pass/Fail result for RMS Phase Error

bit 1 (2): Pass/Fail result for Peak Phase Error

The choices for each bit are 1 for Fail and 0 for Pass.

- <string 3> (4 digits) and <string 4> (4 digits) are the measured rms and peak error data in ° (degree) ranging from 00.0 to 99.9. If any measurement is overranged, underranged or not made, the value 99.9 is returned.

## Power Control Level

```
TESTs:MANual:PHASe:PLEVel <int>  
TESTs:MANual:PHASe:PLEVel?
```

This command specifies a value of Power Control Level for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+30 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+30 dBm)

## Traffic Channel

TESTs:MANual:PHASe:CHANnel <int>

TESTs:MANual:PHASe:CHANnel?

This command specifies the channel number of Traffic Channel (TCH) to be tested for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBANd	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1
	OFF	0 to 124 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512
	E-GSM	512 to 885; 975 to 1023 0 to 124	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512

## Traffic Channel Frequency

TESTs:MANual:PHASe:FREQuency <real> [HZ|KHZ|MHZ|MAHZ]

TESTs:MANual:PHASe:FREQuency?

This command specifies the frequency of Traffic Channel (TCH) to be tested, for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBANd	Allowable Range [Hz]	Preset Value [Hz]
GSM900	DCS1800	890200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	890200000 to 914800000	
E-GSM	DCS1800	880200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	880200000 to 914800000	

RFormat	MBAND	Allowable Range [Hz]	Preset Value [Hz]
DCS1800	GSM900	1710200000 to 1784800000; 890200000 to 914800000	1710200000
	E-GSM	1710200000 to 1784800000; 880200000 to 914800000	
	OFF	1710200000 to 1784800000	
PCS1900	OFF	1850200000 to 1909800000	1850200000

## Command Reference for Sensitivity/RX Quality/RX Level Measurement Screen

The SENSitivity commands are used to set the controls and parameters associated with the Sensitivity/RX Quality/RX Level measurements and the pass/fail tests.

Send the "DISPlay:MANual:SENSitivity" command to display the Sensitivity/RX Quality/RX Level Measurement screen for MANUAL TEST before sending the following commands.

**NOTE** If the mode is set to ASYNC on the Test Set with Option 002, the commands related to Sensitivity/RX Quality/RX Level measurements and pass/fail tests are invalid.

**NOTE** If the mode is set to GPRS on the Test Set with Option 040, the commands related to RX Quality and RX Level measurements and their pass/fail tests are invalid.

### DC Power Voltage

```
TESTs:MANual:SENSitivity:DCPower:VOLT <real> [V]
TESTs:MANual:SENSitivity:DCPower:VOLT?
```

This command specifies a voltage value of DC Power when the DC Power supply mode in the Stand-by screen is set to ON. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

### Power Control Level

```
TESTs:MANual:SENSitivity:PLEvel <int>
TESTs:MANual:SENSitivity:PLEvel?
```

This command specifies a value of Power Control Level for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+39 dBm)
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+39 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+39 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+39 dBm)

## RX Level Measurement

TESTs:MANual:RX:RESults:LEVel?

This query command returns a set of values, <string 1>, <string 2> and <string 3> for RX Level tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (2 digits) is the measured RX Level factor ranging from 00 (<−110 dBm) to 63 (>−48 dBm). If its measurement is overranged, underranged or not made, the value 63 is returned.

**NOTE** If the mode is set to GPRS on the Test Set with Option 040, this query command is invalid.

## RX Quality Measurement

TESTs:MANual:RX:RESults:QUALity?

This query command returns a set of values, <string 1>, <string 2> and <string 3>, for RX Quality tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary data, 0 or 1, for the pass (0) or fail (1) result.
- <string 3> (1 digit) is the measured RX Quality factor ranging from 0 (<0.2%) to 7 (>12.8%). If its measurement is overranged, underranged or not made, the value 7 is returned.

**NOTE** If the mode is set to GPRS on the Test Set with Option 040, this query command is invalid.



## BER BS Level

```
TESTs:MANual:SENSitivity:LEVel <real> [DBM]  
TESTs:MANual:SENSitivity:LEVel?
```

This command specifies an amplitude of BS Level for Sensitivity BER tests, for each radio standard set by the Radio Format command. The allowable range is from  $-110.0$  to  $-50.0$  (dBm) in 0.5 steps. At preset, this is set to  $-102.0$  (dBm) for GSM900 and E-GSM,  $-100.0$  (dBm) for DCS1800, or  $-102.0$  (dBm) for PCS1900.

## Sensitivity BER and FER Measurement (SYNC mode)

```
TESTs:MANual:RX:RESults:SENSitivity?
```

This query command returns a set of test result values, <string 1>, <string 2>, <string 3> and <string 4>, for Sensitivity BER and FER tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary coded decimal ranging from 0 to 3 for the pass/fail results as follows:

bit 0 (1): Pass/Fail result for Sensitivity BER

bit 1 (2): Pass/Fail result for Sensitivity FER

The choices for each bit are 1 for Fail and 0 for Pass.

- <string 3> (5 digits) and <string 4> (5 digits) are the measured Sensitivity BER and FER data ranging from 00.00 to 99.99 in %. If any measurement is overranged, underranged or not made, the value 99.99 is returned.

---

**NOTE** If the mode is set to GPRS on the Test Set with Option 040, refer to Sensitivity BLER Measurement (GPRS mode).

---

## Sensitivity BLER Measurement (GPRS mode)

```
TESTs:MANual:RX:RESults:SENSitivity?
```

This query command returns a set of test result values, <string 1>, <string 2>, <string 3> and <string 4>, for Sensitivity BLER tests.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- <string 2> (1 digit) is the binary coded decimal ranging from 0 to 3 for the pass/fail results as follows:

bit 0 (1): Pass/Fail result for Sensitivity BER

bit 1 (2): Pass/Fail result for Sensitivity BLER

The choices for each bit are 1 for Fail and 0 for Pass.

- <string 3> (5 digits) and <string 4> (5 digits) are the measured Sensitivity BER and BLER data ranging from 00.00 to 99.99 in %. If any measurement is overranged, underranged or not made, the value 99.99 is returned.

**NOTE** If the mode is set to SYNC on the Test Set with Option 040, refer to Sensitivity BER and FER Measurement (SYNC mode).

### Sensitivity Test Frames

TESTs:MANual:SENSitivity:FRAME <int>  
TESTs:MANual:SENSitivity:FRAME?

This command specifies the number of test frames. The allowable range is from 1 to 13000 (frames) in 1 frame steps. At preset, this is set to 10 (frames).

### Traffic Channel

TESTs:MANual:SENSitivity:CHANnel <int>  
TESTs:MANual:SENSitivity:CHANnel?

This command specifies the channel number of Traffic Channel (TCH) to be tested, for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1
	OFF	0 to 124 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512
	E-GSM	512 to 885; 975 to 1023 0 to 124	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512

### Traffic Channel Frequency

TESTs:MANual:SENSitivity:FREQuency  
<real> [HZ|KHZ|MHZ|MAHZ]  
TESTs:MANual:SENSitivity:FREQuency?

This command specifies the frequency of Traffic Channel (TCH) to be tested, for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range [Hz]	Preset Value [Hz]
GSM900	DCS1800	890200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	890200000 to 914800000	
E-GSM	DCS1800	880200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	880200000 to 914800000	
DCS1800	GSM900	1710200000 to 1784800000; 890200000 to 914800000	1710200000
	E-GSM	1710200000 to 1784800000; 880200000 to 914800000	
	OFF	1710200000 to 1784800000	
PCS1900	OFF	1850200000 to 1909800000	1850200000

## Command Reference for Spectrum Monitor Measurement Screen

The SMONitor commands are used to set the controls and parameters associated with the Spectrum Monitor measurements and the pass/fail tests.

Send the "DISPlay:MANual:SMONitor" command to display the Spectrum Monitor screen for MANUAL TEST before sending the following commands.

### Averaging Function

```
TESTs:MANual:SMONitor:AVERage OFF|<int>
TESTs:MANual:SMONitor:AVERage?
```

This command defines whether or not to activate the averaging function. The choices are OFF and <int> for averaging time. The allowable range is from 2 to 99. At preset, this is set to OFF.

### BS Level

```
TESTs:MANual:SMONitor:AMPLitude <real> [dBm]
TESTs:MANual:SMONitor:AMPLitude?
```

This command specifies an amplitude of BS Level. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -50.0 (dBm).

## DC Power Voltage

```
TESTs:MANual:SMONitor:DCPower:VOLT <real> [V]
TESTs:MANual:SMONitor:DCPower:VOLT?
```

This command specifies a voltage value of DC Power when the DC Power supply mode in the Stand-by screen is set to ON. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

## Marker Measurement

```
TESTs:MANual:SMONitor:RESults:MARKer?
```

This query command returns a set of values, <string 1>, <string 2>, <string 3>, <string 4>, and <string 5>, for the marker position.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- The definitions and effective ranges of <string 2> (10 digits), <string 3> (5 digits), <string 4> (7 digits), and <string 5> (5 digits) are shown in the table below. If any measurement is overranged, underranged or not made, the values 999999999 for <string 2>, -99.9 for <string 3> and <string 5>, and +999999 for <string 4>, are returned.

Value	Definition	Range
<string 2>	Absolute RF frequency [Hz]	0880200000 to 0915200000, 1710200000 to 1785200000, 1850200000 to 1909800000
<string 3>	Absolute RF level [dBm]	-99.9 to +99.9
<string 4>	Relative RF frequency [Hz]	+000000 to +400000
<string 5>	Relative RF level [dB]	-99.9 to +0.00

## Marker Position Control

```
TESTs:MANual:SMONitor:RESults:MARKer:POINT UP|DOWN
TESTs:MANual:SMONitor:RESults:MARKer:POINT <int> [HZ]
TESTs:MANual:SMONitor:RESults:MARKer:POINT?
```

This command enables you to move the marker position UP or DOWN in steps, or by <int> in Hz ranging from 0 to 400000. At preset, this is set to 1000 (Hz).

## Measurement Result

```
TESTs:MANual:SMONitor:RESults?
```

This query command returns a set of test result values, <string 1>, <string 2>, <string 3>, <string 4> and <string 5>.

- <string 1> (1 digit) is 0 when all values are within the normal range, or 1 if any measurement is overranged, underranged or not made.
- The definitions and effective ranges of <string 2> (10 digits), <string 3> (5 digits), <string 4> (5 digits), and <string 5> (5 digits) are shown in the table below. If any measurement is overranged, underranged or not made, the values 9999999999 for <string 2>, and –99.9 for <string 3>, <string 4> and <string 5>, are returned.

Value	Definition	Range
<string 2>	Absolute peak RF frequency [Hz]	0880200000 to 0915200000, 1710200000 to 1785200000, 1850200000 to 1909800000
<string 3>	Absolute peak RF level [dBm]	–99.9 to +99.9
<string 4>	Relative RF level [dB]	–99.9 to +00.0 (at +200 kHz)
<string 5>	Relative RF level [dB]	–99.9 to +00.0 (at +250 kHz)

## Power Control Level

TESTs:MANual:SMONitor:PLEvel <int>  
TESTs:MANual:SMONitor:PLEvel?

This command specifies a value of Power Control Level for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+30 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+30 dBm)

## Resolution Bandwidth

TESTs:MANual:SMONitor:RBWidth 10k|30k  
TESTs:MANual:SMONitor:RBWidth?

This command defines a resolution bandwidth. The choices are 10k for 10 kHz and 30k for 30 kHz. At preset, this is set to 30k.

## Traffic Channel

TESTs:MANual:SMONitor:CHANnel <int>

TESTs:MANual:SMONitor:CHANnel?

This command specifies the channel number of Traffic Channel (TCH) to be tested, for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range	Preset Value
GSM900	DCS1800	1 to 124; 512 to 885	1
	OFF	1 to 124	
E-GSM	DCS1800	0 to 124 975 to 1023; 512 to 885	1
	OFF	0 to 124; 975 to 1023	
DCS1800	GSM900	512 to 885; 1 to 124	512
	E-GSM	512 to 885; 975 to 1023 0 to 124	
	OFF	512 to 885	
PCS1900	OFF	512 to 810	512

## Traffic Channel Frequency

TESTs:MANual:SMONitor:FREquency

<real> [HZ|KHZ|MHZ|MAHZ]

TESTs:MANual:SMONitor:FREquency?

This command specifies the frequency of Traffic Channel (TCH) to be tested, for each of the radio standards in conjunction with the Multi Band settings. The allowable range and preset values are as follows:

RFormat	MBAND	Allowable Range [Hz]	Preset Value [Hz]
GSM900	DCS1800	890200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	890200000 to 914800000	
E-GSM	DCS1800	880200000 to 914800000; 1710200000 to 1784800000	896000000
	OFF	880200000 to 914800000	

RFormat	MBAND	Allowable Range [Hz]	Preset Value [Hz]
DCS1800	GSM900	1710200000 to 1784800000; 890200000 to 914800000	1710200000
	E-GSM	1710200000 to 1784800000; 880200000 to 914800000	
	OFF	1710200000 to 1784800000	
PCS1900	OFF	1850200000 to 1909800000	1850200000

## Command Reference for Stand-by Screens

These commands are used to set the controls and parameters associated with an initial test condition.

Send the "DISPlay:MANual:STBY" command to display the Stand-by screen of the MANUAL TEST for Test Sets *without* Option 002 and/or Option 040 before sending the following commands.

For Test Sets with Option 002, send the "DISPlay:MANual:SYNChronous:STBY" command to display the Stand-by screen for MANUAL TEST synchronous mode, or the "DISPlay:MANual:ASYNchronous:STBY" command for MANUAL TEST asynchronous mode, before sending the following commands.

For Test Sets with Option 040, send the "DISPlay:MANual:SYNChronous:STBY" command to display the Stand-by screen for MANUAL TEST synchronous mode, or the "DISPlay:MANual:GPRS:STBY" command for MANUAL TEST GPRS mode, before sending the following commands.

### BCCH Channel

```
TESTs:MANual:BCCH:CHANnel <int>
TESTs:MANual:BCCH:CHANnel?
```

This command specifies the number of Broadcast Control Channel for each radio standard set by the Radio Format commands. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	20
E-GSM	0 to 124, 975 to 1023	20
DCS1800	512 to 885	698
PCS1900	512 to 810	698

## BCCH Frequency

```
TESTs:MANual:BCCH:FREQuency
<real> [HZ|KHZ|MHZ|MAHZ]
TESTs:MANual:BCCH:FREQuency?
```

This command specifies the frequency of Broadcast Control Channel (BCCH) for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range [Hz]	Preset Value [Hz]
GSM900	890200000 to 914800000	890200000
E-GSM	880200000 to 914800000	890200000
DCS1800	1710200000 to 1784800000	1710200000
PCS1900	1850200000 to 1909800000	1850200000

## BS Level

```
TESTs:MANual:AMPLitude <real> [dBm]
TESTs:MANual:AMPLitude?
```

This command specifies an amplitude of BS Level. The allowable range is from -110.0 to -50.0 (dBm) in 0.5 steps. At preset, this is set to -50.0 (dBm).

## DC Power Mode

```
TESTs:MANual:DCPower:MODE ON|OFF|1|0
TESTs:MANual:DCPower:MODE?
```

This command defines a supply mode of DC Power in the Stand-by screen. The choices are ON (1) and OFF (0). If set to ON, DC Power is always supplied. If set to OFF, DC Power is not supplied. At preset, this is set to OFF.

## DC Power Voltage

```
TESTs:MANual:DCPower:VOLT <real> [V]
TESTs:MANual:DCPower:VOLT?
```

This command specifies a value for the DC power voltage in the Stand-by screen. The allowable range is from 3.0 to 11.0 (V) in 0.1 steps. At preset, this is set to 3.0 (V).

## Measurement Mode

```
TESTs:MANual:MODE SYNC|ASYNC
TESTs:MANual:MODE?
```



This command defines a measurement mode. The choices are SYNC for the synchronous mode and ASYNC for the asynchronous mode. At preset, this is set to SYNC.

---

**NOTE** For Test Sets *with* Option 002, this command is valid.

---

### Measurement Mode

TESTs:MANual:MODE SYNC | GPRS  
TESTs:MANual:MODE?

This command defines a measurement mode. The choices are SYNC for the synchronous mode and GPRS for the GPRS mode. At preset, this is set to SYNC.

---

**NOTE** For Test Sets *with* Option 040, this command is valid.

---

### Measurement Mode

TESTs:MANual:MODE SYNC | ASYNC | GPRS  
TESTs:MANual:MODE?

This command defines a measurement mode. The choices are SYNC for the synchronous mode, ASYNC for the asynchronous mode, and GPRS for the GPRS mode. At preset, this is set to SYNC.

---

**NOTE** For Test Sets *with* Option 002 and Option 040, this command is valid.

---

### Midamble

TESTs:MANual:MIDamble  
NONE | TSC0 | TSC1 | TSC2 | TSC3 | TSC4 | TSC5 | TSC6 | TSC7  
TESTs:MANual:MIDamble?

This command specifies a value of Training Sequence Code (TSC), TSC0 to TSC7, or NONE for the amplitude trigger. At preset, this is set to TSC5.

---

**NOTE** If the mode is set to ASYNC on the Test Set *with* Option 002, this command is valid.

---

### MS Signal

TESTs:MANual:SIGNAL BURST | CW  
TESTs:MANual:SIGNAL?

For Test Sets with Option 002 and if the ASYNC mode is selected, this command defines a signaling type from the mobile when an asynchronous mode test is going to be done. The choices are BURST and CW. At preset, this is set to BURST.

---

**NOTE** For Test Sets *without* Option 002, this command is invalid.

---

## Multi Band

```
TESTs:MANual:MBAND DCS1800 | OFF
TESTs:MANual:MBAND?
```

This command specifies whether or not to include the multi-band radio tests for DCS1800 when GSM900 or E-GSM is specified by the Radio Format command.

```
TESTs:MANual:MBAND GSM900 | E-GSM | OFF
TESTs:MANual:MBAND?
```

This command specifies whether or not to include the multi-band radio tests for GSM900 or E-GSM when DCS1800 is specified by the Radio Format command.

If PCS1900 is specified with the Radio Format command, the Multi Band command is automatically disabled (set to OFF).

## Power Control Level

```
TESTs:MANual:PLEVel <int>
TESTs:MANual:PLEVel?
```

This command specifies a value of Power Control Level for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
E-GSM	2 (+39 dBm) to 19 (+5 dBm)	5 (+33 dBm)
DCS1800	0 (+30 dBm) to 15 (+0 dBm), or 29 (+36 dBm) to 31 (+32 dBm)	0 (+30 dBm)
PCS1900	0 (+30 dBm) to 15 (+0 dBm), or 30 (+33 dBm) to 31 (+32 dBm)	0 (+30 dBm)

## Radio Standard

```
TESTs:MANual:RFormat GSM900 | E-GSM | DCS1800 | PCS1900
TESTs:MANual:RFormat?
```

This command defines a system of Radio Standard to be tested. The choices are GSM900, E-GSM, DCS1800, and PCS1900. If PCS1900 is selected, the Multi Band command is automatically set to OFF. At preset, this is set to GSM900.

## Slot Configuration

```
TESTs:MANual:SCONfigure 1x1 | 2x1
```

This command specifies the slot combination for downlink and uplink, respectively, in the Stand-by screen for the GPRS mode, in conjunction with the Slot Measured setting. The combinations of the slot configuration and the slot order measured are as follows:

Option	Slot Configuration	Slot Order Measured
040	Downlink 1 × Uplink 1	4
040	2 × 1	4

At preset, this is set to 1 × 1.

---

**NOTE** If the mode is set to GPRS on the Test Set *with* Option 040, this command is valid.

---

### Slot Measured

TESTs:MANual:MSLot 4

This command specifies the order of slot to be measured, in the Stand-by screen for the GPRS mode, in conjunction with the Slot Configuration setting. The combinations of the slot order measured and the slot configuration are as follows:

Option	Slot Configuration	Slot Order Measured
040	D 1 × U 1	4 (fourth)
040	2 × 1	4 (fourth)

At preset, this is set to 4.

---

**NOTE** As the slot order measured is fixed to 4 when the mode is set to GPRS on the Test Set with Option 040, this command is invalid.

---

### Timing Advance

TESTs:MANual:TADVance <integer>  
TESTs:MANual:TADVance?

This command specifies the number of bits for the timing advance value. The allowable range is from 0 to 63 bits.

---

**NOTE** If the mode is set to ASYNC on the Test Set with Option 002, this command is invalid.

If the mode is set to SYNC or GPRS on the Test Set with Option 040, this command is valid.

---

## Traffic Channel

TESTs:MANual:TCH:CHANnel <int>

TESTs:MANual:TCH:CHANnel?

This command specifies the channel number of Traffic Channel to be analyzed for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range	Preset Value
GSM900	1 to 124	1
E-GSM	0 to 124, 975 to 1023	1
DCS1800	512 to 885	512
PCS1900	512 to 810	512

## Traffic Channel Frequency

TESTs:MANual:TCH:FREQuency <real> [HZ|KHZ|MHZ|MAHZ]

TESTs:MANual:TCH:FREQuency?

This command specifies the frequency of Traffic Channel to be analyzed for each radio standard set by the Radio Format command. The allowable range and preset values are as follows:

RFormat	Allowable Range [Hz]	Preset Value [Hz]
GSM900	890200000 to 914800000	890200000
E-GSM	880200000 to 914800000	890200000
DCS1800	1710200000 to 1784800000	1710200000
PCS1900	1850200000 to 1909800000	1850200000

## TRIGger Subsystem

The Trigger commands are used to control a measurement cycle.

### TRIGger Subsystem Command Reference

#### Abort

TRIGger:ABORt

This command stops and resets the trigger system, and makes the trigger sequence state idle. There is no query form of this command.

#### Trigger Immediately

TRIGger:IMMediate

This command immediately starts a measurement cycle. If one cycle is complete, the Test Set's state becomes idle. There is no query form of this command.

#### Trigger Mode

TRIGger:MODE SINGLE|CONTInuous  
TRIGger:MODE?

This command sets the trigger mode to either a single or repetitive (continuous) measurement. The choices are SINGLE and CONTInuous. At preset, this is set to CONT.

---

## 4 Programming Command Cross Reference

This chapter contains cross reference tables for correlating the screens, softkeys, test parameters and test items with their corresponding syntax for programming the Agilent E6392B GSM MS Test Set.

## AUTOMATIC TEST Screens

### Stand-by/Measuring Screens

The following commands are used to set the controls and parameters associated with the Stand-by and Measuring screens.

**Table 4-1 Command Cross Reference for Stand-by/Measuring Screens**

Item	Command
6 Measurement DCP Variable	TESTs:AUTO:VARiable:DCP:VOLT1 <real> TESTs:AUTO:VARiable:DCP:VOLT1?  TESTs:AUTO:VARiable:DCP:VOLT2 <real> TESTs:AUTO:VARiable:DCP:VOLT2?  TESTs:AUTO:VARiable:DCP:VOLT3 <real> TESTs:AUTO:VARiable:DCP:VOLT3?  TESTs:AUTO:VARiable:DCP:VOLT4 <real> TESTs:AUTO:VARiable:DCP:VOLT4?  TESTs:AUTO:VARiable:DCP:VOLT5 <real> TESTs:AUTO:VARiable:DCP:VOLT5?  TESTs:AUTO:VARiable:DCP:VOLT6 <real> TESTs:AUTO:VARiable:DCP:VOLT6?
6 Measurement TCH Variable	TESTs:AUTO:VARiable:TCH:CHANnel1 <int> TESTs:AUTO:VARiable:TCH:CHANnel1?  TESTs:AUTO:VARiable:TCH:CHANnel2 <int> TESTs:AUTO:VARiable:TCH:CHANnel2?  TESTs:AUTO:VARiable:TCH:CHANnel3 <int> TESTs:AUTO:VARiable:TCH:CHANnel3?  TESTs:AUTO:VARiable:TCH:CHANnel4 <int> TESTs:AUTO:VARiable:TCH:CHANnel4?  TESTs:AUTO:VARiable:TCH:CHANnel5 <int> TESTs:AUTO:VARiable:TCH:CHANnel5?  TESTs:AUTO:VARiable:TCH:CHANnel6 <int> TESTs:AUTO:VARiable:TCH:CHANnel6?
BCCH	TESTs:AUTO:BCCH <int> TESTs:AUTO:BCCH?
DC Power Mode	TESTs:AUTO:DCPower:MODE AUTO ON OFF TESTs:AUTO:DCPower:MODE?
DC Power Voltage	TESTs:AUTO:DCPower:VOLT <real> TESTs:AUTO:DCPower:VOLT?

Item	Command
Multi Band	TESTs:AUTO:MBAND OFF DCS1800 [RFOR=GSM900/E-GSM] TESTs:AUTO:MBAND OFF GSM900 E-GSM [RFOR=DCS1800] TESTs:AUTO:MBAND?
Radio Standard	TESTs:AUTO:RFormat GSM900 E-GSM DCS1800 PCS1900 TESTs:AUTO:RFormat?
Screen Mode	TESTs:AUTO:SCReen SIMPlified DETailed
Signaling State	TESTs:AUTO:MEASure:SIGNaling:STATe?
Talk Test Result	TESTs:AUTO:MEASure:TALK PASS FAIL
Talk Test TCH	TESTs:AUTO:TCH <int> TESTs:AUTO:TCH?



## Test Result Screens

The following RESULTS commands are used to set the controls and parameters associated with the screens for three test measurements and Pass/Fail results.

**Table 4-2 RESULTS Command Cross Reference**

Item	Command
All Tests (detail)	TESTs:AUTO:RESults:WHOLe?
All Tests (summary)	TESTs:AUTO:RESults:ALL?
Burst Timing Measurement	TESTs:AUTO:RESults:BTIMing1? TESTs:AUTO:RESults:BTIMing2? TESTs:AUTO:RESults:BTIMing3? TESTs:AUTO:RESults:BTIMing4? TESTs:AUTO:RESults:BTIMing5? TESTs:AUTO:RESults:BTIMing6?
DC Current Measurement	TESTs:AUTO:RESults:CURRent1? TESTs:AUTO:RESults:CURRent2? TESTs:AUTO:RESults:CURRent3? TESTs:AUTO:RESults:CURRent4? TESTs:AUTO:RESults:CURRent5? TESTs:AUTO:RESults:CURRent6?
Frequency Error Measurement	TESTs:AUTO:RESults:FREQuency1? TESTs:AUTO:RESults:FREQuency2? TESTs:AUTO:RESults:FREQuency3? TESTs:AUTO:RESults:FREQuency4? TESTs:AUTO:RESults:FREQuency5? TESTs:AUTO:RESults:FREQuency6?
MS Information	TESTs:AUTO:RESults:MSINformation:IMSI? TESTs:AUTO:RESults:MSINformation:IMEI? TESTs:AUTO:RESults:MSINformation:DIAL? TESTs:AUTO:RESults:MSINformation:PCLass? TESTs:AUTO:RESults:MSINformation:GVERsion?
Peak TX Power Measurement	TESTs:AUTO:RESults:TPOWer1? TESTs:AUTO:RESults:TPOWer2? TESTs:AUTO:RESults:TPOWer3? TESTs:AUTO:RESults:TPOWer4? TESTs:AUTO:RESults:TPOWer5? TESTs:AUTO:RESults:TPOWer6?
Phase Error Marker Measurement	TESTs:AUTO:RESults:PHASe1:MARKer? TESTs:AUTO:RESults:PHASe2:MARKer? TESTs:AUTO:RESults:PHASe3:MARKer? TESTs:AUTO:RESults:PHASe4:MARKer? TESTs:AUTO:RESults:PHASe5:MARKer? TESTs:AUTO:RESults:PHASe6:MARKer?

Item	Command
Phase Error Marker Position Control	TESTs:AUTO:RESults:PHASe1:MARKer:POINT UP DOWN TESTs:AUTO:RESults:PHASe1:MARKer:POINT <real> TESTs:AUTO:RESults:PHASe1:MARKer:POINT?  TESTs:AUTO:RESults:PHASe2:MARKer:POINT UP DOWN TESTs:AUTO:RESults:PHASe2:MARKer:POINT <real> TESTs:AUTO:RESults:PHASe2:MARKer:POINT?  TESTs:AUTO:RESults:PHASe3:MARKer:POINT UP DOWN TESTs:AUTO:RESults:PHASe3:MARKer:POINT <real> TESTs:AUTO:RESults:PHASe3:MARKer:POINT?  TESTs:AUTO:RESults:PHASe4:MARKer:POINT UP DOWN TESTs:AUTO:RESults:PHASe4:MARKer:POINT <real> TESTs:AUTO:RESults:PHASe4:MARKer:POINT?  TESTs:AUTO:RESults:PHASe5:MARKer:POINT UP DOWN TESTs:AUTO:RESults:PHASe5:MARKer:POINT <real> TESTs:AUTO:RESults:PHASe5:MARKer:POINT?  TESTs:AUTO:RESults:PHASe6:MARKer:POINT UP DOWN TESTs:AUTO:RESults:PHASe6:MARKer:POINT <real> TESTs:AUTO:RESults:PHASe6:MARKer:POINT?
Phase Error Measurement	TESTs:AUTO:RESults:PHASe1? TESTs:AUTO:RESults:PHASe2? TESTs:AUTO:RESults:PHASe3? TESTs:AUTO:RESults:PHASe4? TESTs:AUTO:RESults:PHASe5? TESTs:AUTO:RESults:PHASe6?
Power Ramp Graph Zoom	TESTs:AUTO:RESults:RAMP1:ZOOM ON OFF 1 0 TESTs:AUTO:RESults:RAMP1:ZOOM?  TESTs:AUTO:RESults:RAMP2:ZOOM ON OFF 1 0 TESTs:AUTO:RESults:RAMP2:ZOOM?  TESTs:AUTO:RESults:RAMP3:ZOOM ON OFF 1 0 TESTs:AUTO:RESults:RAMP3:ZOOM?  TESTs:AUTO:RESults:RAMP4:ZOOM ON OFF 1 0 TESTs:AUTO:RESults:RAMP4:ZOOM?  TESTs:AUTO:RESults:RAMP5:ZOOM ON OFF 1 0 TESTs:AUTO:RESults:RAMP5:ZOOM?  TESTs:AUTO:RESults:RAMP6:ZOOM ON OFF 1 0 TESTs:AUTO:RESults:RAMP6:ZOOM?
Power Ramp Marker Measurement	TESTs:AUTO:RESults:RAMP1:MARKer? TESTs:AUTO:RESults:RAMP2:MARKer? TESTs:AUTO:RESults:RAMP3:MARKer? TESTs:AUTO:RESults:RAMP4:MARKer? TESTs:AUTO:RESults:RAMP5:MARKer? TESTs:AUTO:RESults:RAMP6:MARKer?

Item	Command
Power Ramp Marker Position Control	<p>TESTs:AUTO:RESults:RAMP1:MARKer:POINt UP DOWN  TESTs:AUTO:RESults:RAMP1:MARKer:POINt &lt;real&gt;  TESTs:AUTO:RESults:RAMP1:MARKer:POINt?</p> <p>TESTs:AUTO:RESults:RAMP2:MARKer:POINt UP DOWN  TESTs:AUTO:RESults:RAMP2:MARKer:POINt &lt;real&gt;  TESTs:AUTO:RESults:RAMP2:MARKer:POINt?</p> <p>TESTs:AUTO:RESults:RAMP3:MARKer:POINt UP DOWN  TESTs:AUTO:RESults:RAMP3:MARKer:POINt &lt;real&gt;  TESTs:AUTO:RESults:RAMP3:MARKer:POINt?</p> <p>TESTs:AUTO:RESults:RAMP4:MARKer:POINt UP DOWN  TESTs:AUTO:RESults:RAMP4:MARKer:POINt &lt;real&gt;  TESTs:AUTO:RESults:RAMP4:MARKer:POINt?</p> <p>TESTs:AUTO:RESults:RAMP5:MARKer:POINt UP DOWN  TESTs:AUTO:RESults:RAMP5:MARKer:POINt &lt;real&gt;  TESTs:AUTO:RESults:RAMP5:MARKer:POINt?</p> <p>TESTs:AUTO:RESults:RAMP6:MARKer:POINt UP DOWN  TESTs:AUTO:RESults:RAMP6:MARKer:POINt &lt;real&gt;  TESTs:AUTO:RESults:RAMP6:MARKer:POINt?</p>
Power Ramp Test	<p>TESTs:AUTO:RESults:RAMP1?  TESTs:AUTO:RESults:RAMP2?  TESTs:AUTO:RESults:RAMP3?  TESTs:AUTO:RESults:RAMP4?  TESTs:AUTO:RESults:RAMP5?  TESTs:AUTO:RESults:RAMP6?</p>
RX Level Measurement	<p>TESTs:AUTO:RESults:LEVel1?  TESTs:AUTO:RESults:LEVel2?  TESTs:AUTO:RESults:LEVel3?  TESTs:AUTO:RESults:LEVel4?  TESTs:AUTO:RESults:LEVel5?  TESTs:AUTO:RESults:LEVel6?</p>
RX Quality Measurement	<p>TESTs:AUTO:RESults:QUALity1?  TESTs:AUTO:RESults:QUALity2?  TESTs:AUTO:RESults:QUALity3?  TESTs:AUTO:RESults:QUALity4?  TESTs:AUTO:RESults:QUALity5?  TESTs:AUTO:RESults:QUALity6?</p>
Sensitivity Measurement	<p>TESTs:AUTO:RESults:SENSitivity1?  TESTs:AUTO:RESults:SENSitivity2?  TESTs:AUTO:RESults:SENSitivity3?  TESTs:AUTO:RESults:SENSitivity4?  TESTs:AUTO:RESults:SENSitivity5?  TESTs:AUTO:RESults:SENSitivity6?</p>

## CONFIGURATION Screen

The CONFigure subsystem commands are used to set the controls and parameters associated with the basic system requirement, SRAM file management, test condition, and test sequence.

### File Management Screens

The following FILE commands are used to manage the test setup files and an SRAM memory card.

**Table 4-3 FILE Command Cross Reference**

Item	Command
Delete File	CONFigure:FILE:DELeTe <filename>
Format Card	CONFigure:FILE:FORMat
List Files	CONFigure:FILE:LIST?
Recall File	CONFigure:FILE:RECall <filename>
Save File	CONFigure:FILE:SAVE <filename>,<comment>

## System Configuration Screen

The following CONFigure subsystem commands are used to set the reference oscillator source, date and time, beeper, RF attenuation, firmware update, and so forth which are fundamentally required to operate the GSM MS Test Set.

**Table 4-4 CONFigure Subsystem Command Cross Reference**

Item	Command
13 MHz Reference Oscillator	CONFigure:ROSCillator INTERNAL EXTERNAL CONFigure:ROSCillator?
Attenuation	CONFigure:LOSS ON OFF 1 0 CONFigure:LOSS?  CONFigure:LOSS:RFIN <real> CONFigure:LOSS:RFIN?  CONFigure:LOSS:RFOUT <real> CONFigure:LOSS:RFOUT?
Beeper Control	CONFigure:BEEPer ON OFF 1 0 CONFigure:BEEPer?
Date	CONFigure:DATE <int y>,<int m>,<int d> CONFigure:DATE?
Network Config	CONFigure:NETWork:MCC <int> CONFigure:NETWork:MCC?  CONFigure:NETWork:MNC <int> CONFigure:NETWork:MNC?  CONFigure:NETWork:NCC <int> CONFigure:NETWork:NCC?  CONFigure:NETWork:LAC <int> CONFigure:NETWork:LAC?  CONFigure:NETWork:BSPa <int> CONFigure:NETWork:BSPa?
Panel Key Control	CONFigure:PKEY UNLOCK LOCK CONFigure:PKEY?
Printer Control	CONFigure:PRINter HPPCL ESCP CONFigure:PRINter?
Time	CONFigure:TIME <int h>,<int m> CONFigure:TIME?

## Test Setup: Test Condition Screen

The following CONDition commands are used to set the controls and parameters associated with the Test Setup: Test Condition screen.

**Table 4-5 CONDition Command Cross Reference**

Item	Command
Averaging Function	CONFigure:CONDition:AVERAge OFF <int> CONFigure:CONDition:AVERAge?
BER BS Level	CONFigure:CONDition:SENSitivity:LEVel <real> CONFigure:CONDition:SENSitivity:LEVel?
BER Frames	CONFigure:CONDition:SENSitivity:FRAMe <int> CONFigure:CONDition:SENSitivity:FRAMe?
BER Limit	CONFigure:CONDition:LIMit:BER <real h> CONFigure:CONDition:LIMit:BER?
BLER Limit <sup>a</sup>	CONFigure:CONDition:LIMit:BLER <real h> CONFigure:CONDition:LIMit:BLER?
BS Level	CONFigure:CONDition:AMPLitude <real> CONFigure:CONDition:AMPLitude?
Burst Timing Limit	CONFigure:CONDition:LIMit:BTIMing <real l>,<real h> CONFigure:CONDition:LIMit:BTIMing?
DC Current Camp On Limit	CONFigure:CONDition:LIMit:CURREnt:CAMP <int l>,<int h> CONFigure:CONDition:LIMit:CURREnt:CAMP?
DC Current Talk Limit	CONFigure:CONDition:LIMit:CURREnt:TALK <int l>,<int h> CONFigure:CONDition:LIMit:CURREnt:TALK?
FER Limit	CONFigure:CONDition:LIMit:FER <real h> CONFigure:CONDition:LIMit:FER?
Frequency Error Limit	CONFigure:CONDition:LIMit:FREQuency <int l>,<int h> CONFigure:CONDition:LIMit:FREQuency?
Loopback Delay	CONFigure:CONDition:LDElay SHORT MID LONG CONFigure:CONDition:LDElay?
MS Power Class	CONFigure:CONDition:PCLass <int> CONFigure:CONDition:PCLass?
Peak TX Power Limit	CONFigure:CONDition:LIMit:TPOWer <int>,<real l>,<real h> CONFigure:CONDition:LIMit:TPOWer?
Phase Error Limit	CONFigure:CONDition:LIMit:PHASe:PEAK <real h> CONFigure:CONDition:LIMit:PHASe:PEAK?  CONFigure:CONDition:LIMit:PHASe:RMS <real h> CONFigure:CONDition:LIMit:PHASe:RMS?

Item	Command
Power Control Level	CONFIGure:CONDition:PLEVel:HIGH <int> CONFIGure:CONDition:PLEVel:HIGH?  CONFIGure:CONDition:PLEVel:MEDium <int> CONFIGure:CONDition:PLEVel:MEDium?  CONFIGure:CONDition:PLEVel:LOW <int> CONFIGure:CONDition:PLEVel:LOW?  CONFIGure:CONDition:PLEVel:MANual <int> CONFIGure:CONDition:PLEVel:MANual?
Power Control Level for Peak TX Power Limit	CONFIGure:CONDition:LIMit:TPOWER:PLEVel <int> CONFIGure:CONDition:LIMit:TPOWER:PLEVel?
Radio Standard	CONFIGure:CONDition:RFormat GSM900 E-GSM DCS1800 PCS1900 CONFIGure:CONDition:RFormat?
RF Output	CONFIGure:CONDition:RFOutput AUTO ON CONFIGure:CONDition:RFOutput?
RX Level Limit	CONFIGure:CONDition:LIMit:LEVel <int l>,<int h> CONFIGure:CONDition:LIMit:LEVel?
RX Quality Limit	CONFIGure:CONDition:LIMit:QUALity <int l>,<int h> CONFIGure:CONDition:LIMit:QUALity?

a. Available with Option 040.

## Test Setup: Test Sequence Screen

The following SEquence commands are used to set controls and parameters associated with the screen for a test flow and sequence, and to define whether or not to execute each of six Pass/Fail tests in AUTOMATIC TEST.

**Table 4-6 SEquence Command Cross Reference**

Item	Command
6 Measurement DC Power Variable	CONFigure:SEquence:VARiable:DCP:VOLT1 <real> CONFigure:SEquence:VARiable:DCP:VOLT1?  CONFigure:SEquence:VARiable:DCP:VOLT2 <real> CONFigure:SEquence:VARiable:DCP:VOLT2?  CONFigure:SEquence:VARiable:DCP:VOLT3 <real> CONFigure:SEquence:VARiable:DCP:VOLT3?  CONFigure:SEquence:VARiable:DCP:VOLT4 <real> CONFigure:SEquence:VARiable:DCP:VOLT4?  CONFigure:SEquence:VARiable:DCP:VOLT5 <real> CONFigure:SEquence:VARiable:DCP:VOLT5?  CONFigure:SEquence:VARiable:DCP:VOLT6 <real> CONFigure:SEquence:VARiable:DCP:VOLT6?
6 Measurement Traffic Channel Variable	CONFigure:SEquence:VARiable:TCH:CHANnel1 <int> CONFigure:SEquence:VARiable:TCH:CHANnel1?  CONFigure:SEquence:VARiable:TCH:CHANnel2 <int> CONFigure:SEquence:VARiable:TCH:CHANnel2?  CONFigure:SEquence:VARiable:TCH:CHANnel3 <int> CONFigure:SEquence:VARiable:TCH:CHANnel3?  CONFigure:SEquence:VARiable:TCH:CHANnel4 <int> CONFigure:SEquence:VARiable:TCH:CHANnel4?  CONFigure:SEquence:VARiable:TCH:CHANnel5 <int> CONFigure:SEquence:VARiable:TCH:CHANnel5?  CONFigure:SEquence:VARiable:TCH:CHANnel6 <int> CONFigure:SEquence:VARiable:TCH:CHANnel6?
BCCH Channel	CONFigure:SEquence:BCCH:CHANnel <int> CONFigure:SEquence:BCCH:CHANnel?
BCCH Frequency	CONFigure:SEquence:BCCH:FREQuency <real> CONFigure:SEquence:BCCH:FREQuency?
Burst Timing Test	CONFigure:SEquence:BTIMing <int> CONFigure:SEquence:BTIMing?
DC Current Test	CONFigure:SEquence:CURRent <int> CONFigure:SEquence:CURRent?



Item	Command
DC Power Mode	CONFigure:SEquence:DCPower:MODE AUTO ON OFF CONFigure:SEquence:DCPower:MODE?
DC Power Voltage	CONFigure:SEquence:DCPower:VOLT <real> CONFigure:SEquence:DCPower:VOLT?
First Call	CONFigure:SEquence:SIGNALing:CALL1 MS BS CONFigure:SEquence:SIGNALing:CALL1?
Frequency Error Test	CONFigure:SEquence:FREQuency <int> CONFigure:SEquence:FREQuency?
Instruction Message #	CONFigure:SEquence:SIGNALing:MESSAge1 <string> CONFigure:SEquence:SIGNALing:MESSAge1?  CONFigure:SEquence:SIGNALing:MESSAge2 <string> CONFigure:SEquence:SIGNALing:MESSAge2?  CONFigure:SEquence:SIGNALing:MESSAge3 <string> CONFigure:SEquence:SIGNALing:MESSAge3?  CONFigure:SEquence:SIGNALing:MESSAge4 <string> CONFigure:SEquence:SIGNALing:MESSAge4?  CONFigure:SEquence:SIGNALing:MESSAge5 <string> CONFigure:SEquence:SIGNALing:MESSAge5?  CONFigure:SEquence:SIGNALing:MESSAge6 <string> CONFigure:SEquence:SIGNALing:MESSAge6?  CONFigure:SEquence:SIGNALing:MESSAge7 <string> CONFigure:SEquence:SIGNALing:MESSAge7?
Location Update	CONFigure:SEquence:SIGNALing:LOCUpdate ON OFF 1 0 CONFigure:SEquence:SIGNALing:LOCUpdate?
Multi Band	TESTs:MANual:MBAND OFF DCS1800 [RFOR=GSM900/E-GSM] TESTs:MANual:MBAND OFF GSM900 E-GSM [RFOR=DCS1800] TESTs:MANual:MBAND?
Peak TX Power Test	CONFigure:SEquence:TPOWER:HIGH <int> CONFigure:SEquence:TPOWER:HIGH?  CONFigure:SEquence:TPOWER:MEDium <int> CONFigure:SEquence:TPOWER:MEDium?  CONFigure:SEquence:TPOWER:LOW <int> CONFigure:SEquence:TPOWER:LOW?
Phase Error Test	CONFigure:SEquence:PHASe <int> CONFigure:SEquence:PHASe?
Power Ramp Test	CONFigure:SEquence:RAMP <int> CONFigure:SEquence:RAMP?
Radio Standard	CONFigure:SEquence:RFORmat GSM900 E-GSM DCS1800 PCS1900 CONFigure:SEquence:RFORmat?

Item	Command
RX Level Test	CONFigure:SEquence:LEVel <int> CONFigure:SEquence:LEVel?
RX Quality Test	CONFigure:SEquence:QUALity <int> CONFigure:SEquence:QUALity?
Second Call	CONFigure:SEquence:SIGNaling:CALL2 ON OFF 1 0 CONFigure:SEquence:SIGNaling:CALL2?
Sensitivity Test	CONFigure:SEquence:SENSitivity <int> CONFigure:SEquence:SENSitivity?
Talk Test	CONFigure:SEquence:SIGNaling:TALK ON OFF 1 0 CONFigure:SEquence:SIGNaling:TALK?
Talk Test TCH Channel	CONFigure:SEquence:TCH:CHANnel <int> CONFigure:SEquence:TCH:CHANnel?
Talk Test TCH Frequency	CONFigure:SEquence:TCH:FREQuency <real> CONFigure:SEquence:TCH:FREQuency?

## Display Each Screen

The following DISPlay subsystem commands are used to select an initial display of each test item and test setup for each function mode.

**Table 4-7 DISPlay Subsystem Command Cross Reference**

Item	Command
<b>AUTOMATIC TEST Screens</b>	
Burst Timing/Power Ramp	DISPlay:AUTO:BTIMing
DC Current	DISPlay:AUTO:CURRent
Peak TX Power	DISPlay:AUTO:TPOWer
Phase Error/ Frequency Error	DISPlay:AUTO:PHASe
Sensitivity/RX Quality/ RX Level	DISPlay:AUTO:SENSitivity
Stand-by	DISPlay:AUTO:STBY
<b>CONFIGURATION Screens</b>	
CONFIGURATION	DISPlay:CONFigure
File Management	DISPlay:CONFigure:FILE
Test Condition	DISPlay:CONFigure:CONDition
Test Sequence	DISPlay:CONFigure:SEQuence
<b>Initial Screen:</b>	DISPlay:INITial
<b>MANUAL TEST Screens</b>	
DC Current	DISPlay:MANual:CURRent
Measuring	DISPlay:MANual:MEASure
Peak TX Power/ Burst Timing/Power Ramp	DISPlay:MANual:TPOWer
Phase Error/ Frequency Error	DISPlay:MANual:PHASe
Sensitivity	DISPlay:MANual:SENSitivity
Spectrum Monitor	DISPlay:MANual:SMONitor
Stand-by [without any option]	DISPlay:MANual:STBY
Stand-by in Async Mode [Option 002]	DISPlay:MANual:ASYNchronous:STBY

Item	Command
Stand-by in GPRS Mode [Option 040]	DISPlay:MANual:GPRS:STBY
Stand-by in Sync Mode [Option 002, 040]	DISPlay:MANual:SYNChronous:STBY
<b>SIGNAL GENERATOR</b> [Option 002]	DISPlay:RFGenerator
<b>SPECTRUM MONITOR</b> [Option 002]	DISPlay:SMONitor

## IEEE Common Commands

The following IEEE common commands are used to control and query the status of the GSM MS Test Set:

**Table 4-8 IEEE Common Command Cross Reference**

Item	Command
Standard Event Status Enable	*ESE <int> *ESE?
Operation Complete	*OPC *OPC?
Event Status Register Query	*ESR?
Clear Status	*CLS
Identification Query	*IDN?
Instrument Option Query	*OPT?
Reset Instrument	*RST
Status Byte Register Query	*STB?

## MANUAL TEST Screens

### Stand-by Screens

The following commands are used to set the controls and parameters associated with the Stand-by screen.

**Table 4-9 Command Cross Reference for Stand-by Screen**

Item	Command
BCCH Channel	TESTs:MANual:BCCH:CHANnel <int> TESTs:MANual:BCCH:CHANnel?
BCCH Frequency	TESTs:MANual:BCCH:FREQuency <real> TESTs:MANual:BCCH:FREQuency?
BS Level	TESTs:MANual:AMPLitude <real> TESTs:MANual:AMPLitude?
DC Power Mode	TESTs:MANual:DCPower:MODE ON OFF 1 0 TESTs:MANual:DCPower:MODE?
DC Power Voltage	TESTs:MANual:DCPower:VOLT <real> TESTs:MANual:DCPower:VOLT?
Measurement Mode [Option 002]	TESTs:MANual:MODE SYNC ASync TESTs:MANual:MODE?
Measurement Mode [Option 040]	TESTs:MANual:MODE SYNC GPRS TESTs:MANual:MODE?
Measurement Mode [Option 002, 040]	TESTs:MANual:MODE SYNC ASync GPRS TESTs:MANual:MODE?
MS Signal [Option 002 Async mode]	TESTs:MANual:SIGNAL BURST CW TESTs:MANual:SIGNAL?
Multi Band	TESTs:MANual:MBAND OFF DCS1800 [RFOR=GSM900/E-GSM] TESTs:MANual:MBAND OFF GSM900 E-GSM [RFOR=DCS1800] TESTs:MANual:MBAND?
Power Control Level	TESTs:MANual:PLEVel <int> TESTs:MANual:PLEVel?
Radio Standard	TESTs:MANual:RFormat GSM900 E-GSM DCS1800 PCS1900 TESTs:MANual:RFormat?
Slot Configuration [Option 040]	TESTs:MANual:SCONfigure 1x1 2x1

Item	Command
Timing Advance	TESTs:MANual:TADVance <int> TESTs:MANual:TADVance?
Traffic Channel <sup>a</sup>	TESTs:MANual:TCH:CHANnel <int> TESTs:MANual:TCH:CHANnel?
Traffic Channel Frequency <sup>a</sup>	TESTs:MANual:TCH:FREQuency <real> TESTs:MANual:TCH:FREQuency?

- a. Changes to PDTCH (Packet Data Traffic CHannel) when the GPRS mode is selected on the Test Set with Option 040.

## Measuring Screens

The following commands are used to set the controls and parameters associated with the Measuring screen.

**Table 4-10 Command Cross Reference for Measuring Screen**

Item	Command
BS Call	TESTs:MANual:MEASure:BSCall
BS Level	TESTs:MANual:MEASure:AMPLitude <int> TESTs:MANual:MEASure:AMPLitude?
BS Release	TESTs:MANual:MEASure:BSRelease
DC Power Voltage	TESTs:MANual:MEASure:DCPower:VOLT <real> TESTs:MANual:MEASure:DCPower:VOLT?
End Test [Option 040 GPRS mode]	TESTs:MANual:MEASure:END
MS Call	TESTs:MANual:MEASure:MSCall
MS Release	TESTs:MANual:MEASure:MSRelease
MS Signal [Option 002]	TESTs:MANual:MEASure:SIGNAL BURST CW TESTs:MANual:MEASure:SIGNAL?
Power Control Level	TESTs:MANual:MEASure:PLEVel <int> TESTs:MANual:MEASure:PLEVel?
Signaling State <sup>a</sup>	TESTs:MANual:MEASure:SIGNALing:STATE?
Slot Configuration [Option 040]	TESTs:MANual:MEASure:SCONfigure 1x1 2x1
Timing Advance	TESTs:MANual:MEASure:TADVance <int> TESTs:MANual:MEASure:TADVance?
Traffic Channel <sup>b</sup>	TESTs:MANual:MEASure:TCH:CHANnel <int> TESTs:MANual:MEASure:TCH:CHANnel?
Traffic Channel Frequency <sup>b</sup>	TESTs:MANual:MEASure:TCH:FREQuency <real> TESTs:MANual:MEASure:TCH:FREQuency?

- Idle or Attached will be returned when the GPRS mode is selected on the Test Set with Option 040.
- Changes to PDTCH (Packet Data Traffic CHannel) when the GPRS mode is selected on the Test Set with Option 040.



## DC Current Measuring Screens

The following CURRENT commands are used to set the controls and parameters associated with the screens for DC Current measurements and Pass/Fail results.

**Table 4-11 CURRENT Command Cross Reference**

Item	Command
DC Current Measurement [Sync mode]	TESTs:MANual:CURRENT:RESults:CAMP? TESTs:MANual:CURRENT:RESults:TALK?
DC Current Measurement <sup>a</sup>	TESTs:MANual:CURRENT:RESults?
DC Power Voltage	TESTs:MANual:CURRENT:DCPower:VOLT <real> TESTs:MANual:CURRENT:DCPower:VOLT?
Power Control Level	TESTs:MANual:CURRENT:PLEVel <int> TESTs:MANual:CURRENT:PLEVel?
Traffic Channel	TESTs:MANual:CURRENT:CHANnel <int> TESTs:MANual:CURRENT:CHANnel?
Traffic Channel Frequency	TESTs:MANual:CURRENT:FREQuency <real> TESTs:MANual:CURRENT:FREQuency?

- a. Neither Camp On nor Talk will not be displayed when the ASYNC or GPRS mode is selected on the Test Set with Option 002 and/or Option 040.

## MS Information Screen

The following MSINformation commands are used to get information on the mobile under test. For Test Sets with Option 002, if set to ASYNC, these commands are invalid. For Test Sets with Option 040, if set to GPRS, only the query for Power Class Information is valid.

**Table 4-12 MSINformation Command Cross Reference**

Item	Command
IMSI Information <sup>a</sup>	TESTs:MANual:RESults:MSINformation:IMSI?
IMEI Information <sup>a</sup>	TESTs:MANual:RESults:MSINformation:IMEI?
Dialed # Information <sup>a</sup>	TESTs:MANual:RESults:MSINformation:DIAL?
Power Class Information	TESTs:MANual:RESults:MSINformation:PCLass?
GSM Version Information <sup>a</sup>	TESTs:MANual:RESults:MSINformation:GVERsion?

a. Invalid when the GPRS mode is selected on the Test Set with Option 040.

## Peak TX Power/Burst Timing/Power Ramp Measuring Screens

The following TPOWer/TXAMplitude commands are used to set the controls and parameters associated with the screens for Peak TX Power/Burst Timing/Power Ramp measurements and Pass/Fail test results.

**Table 4-13 TPOWer/TXAMplitude Command Cross Reference**

Item	Command
Actual Timing Advance	TESTs:MANual:TXAMplitude:ACTadvance?
Averaging Function	TESTs:MANual:TPOWer:AVERage OFF <int> TESTs:MANual:TPOWer:AVERage?
BS Level	TESTs:MANual:TPOWer:AMPLitude <real> TESTs:MANual:TPOWer:AMPLitude?
Burst Timing Measurement	TESTs:MANual:TXAMplitude:RESults:BTIMing?
DC Power Voltage	TESTs:MANual:TPOWer:DCPower:VOLT <real> TESTs:MANual:TPOWer:DCPower:VOLT?
Midamble [Option 002]	TESTs:MANual:TPOWer:MIDamble <int> TESTs:MANual:TPOWer:MIDamble?
Peak TX Power Measurement	TESTs:MANual:TXAMplitude:RESults:TPOWer?
Power Control Level	TESTs:MANual:TPOWer:PLEVel <int> TESTs:MANual:TPOWer:PLEVel?
Power Ramp Graph Zoom	TESTs:MANual:TXAMplitude:RESults:ZOOM ON OFF 0 1 TESTs:MANual:TXAMplitude:RESults:ZOOM?
Power Ramp Marker Measurement	TESTs:MANual:TXAMplitude:RESults:MARKer?
Power Ramp Marker Position Control	TESTs:MANual:TXAMplitude:RESults:MARKer:POINT UP DOWN TESTs:MANual:TXAMplitude:RESults:MARKer:POINT <real> TESTs:MANual:TXAMplitude:RESults:MARKer:POINT?
Power Ramp Test	TESTs:MANual:TXAMplitude:RESults:RAMP?
Timing Advance	TESTs:MANual:TPOWer:TADVance <int> TESTs:MANual:TPOWer:TADVance?
Traffic Channel	TESTs:MANual:TPOWer:CHANnel <int> TESTs:MANual:TPOWer:CHANnel?
Traffic Channel Frequency	TESTs:MANual:TPOWer:FREQuency <real> TESTs:MANual:TPOWer:FREQuency?

## Phase Error/Frequency Error Measuring Screens

The following PHASE/TXFREQUENCY commands are used to set the controls and parameters associated with the screens for Phase Error and Frequency Error measurements and Pass/Fail test results.

**Table 4-14 PHASE/TXFREQUENCY Command Cross Reference**

Item	Command
Averaging Function	TESTs:MANual:PHASe:AVERAge OFF <int> TESTs:MANual:PHASe:AVERAge?
BS Level	TESTs:MANual:PHASe:AMPLitude <real> TESTs:MANual:PHASe:AMPLitude?
DC Power Voltage	TESTs:MANual:PHASe:DCPower:VOLT <real> TESTs:MANual:PHASe:DCPower:VOLT?
Frequency Error Measurement	TESTs:MANual:TXFREQUENCY:RESults:FREQuency?
Midamble [Option 002]	TESTs:MANual:PHASe:MIDamble <int> TESTs:MANual:PHASe:MIDabmble?
Phase Error Marker Measurement	TESTs:MANual:TXFREQUENCY:RESults:MARKer?
Phase Error Marker Position Control	TESTs:MANual:TXFREQUENCY:RESults:MARKer:POINT UP DOWN TESTs:MANual:TXFREQUENCY:RESults:MARKer:POINT <real> TESTs:MANual:TXFREQUENCY:RESults:MARKer:POINT?
Phase Error Measurement	TESTs:MANual:TXFREQUENCY:RESults:PHASe?
Power Control Level	TESTs:MANual:PHASe:PLEVel <int> TESTs:MANual:PHASe:PLEVel?
Traffic Channel	TESTs:MANual:PHASe:CHANnel <int> TESTs:MANual:PHASe:CHANnel?
Traffic Channel Frequency	TESTs:MANual:PHASe:FREQuency <real> TESTs:MANual:PHASe:FREQuency?

## Sensitivity/RX Quality/RX Level Measuring Screens

The following SENSitivity/RX commands are used to set the controls and parameters associated with the screens for Sensitivity/RX Quality/RX Level measurements and Pass/Fail test results. For Test Sets with Option 002, if set to ASYNC, these commands are invalid.

**Table 4-15 SENSitivity/RX Command Cross Reference**

Item	Command
BER BS Level	TESTs:MANual:SENSitivity:LEVel <real> TESTs:MANual:SENSitivity:LEVel?
BER Frames	TESTs:MANual:SENSitivity:FRAMe <int> TESTs:MANual:SENSitivity:FRAMe?
DC Power Voltage	TESTs:MANual:SENSitivity:DCPower:VOLT <real> TESTs:MANual:SENSitivity:DCPower:VOLT?
Power Control Level	TESTs:MANual:SENSitivity:PLEVel <int> TESTs:MANual:SENSitivity:PLEVel?
RX Level Measurement <sup>a</sup>	TESTs:MANual:RX:RESults:LEVel?
RX Quality Measurement <sup>a</sup>	TESTs:MANual:RX:RESults:QUALity?
Sensitivity Measurement <sup>b</sup>	TESTs:MANual:RX:RESults:SENSitivity?
Traffic Channel	TESTs:MANual:SENSitivity:CHANnel <int> TESTs:MANual:SENSitivity:CHANnel?
Traffic Channel Frequency	TESTs:MANual:SENSitivity:FREQuency <real> TESTs:MANual:SENSitivity:FREQuency?

a. Invalid when the GPRS mode is selected on the Test Set with Option 040.

b. Only BLER is measured when the GPRS mode is selected on the Test Set with Option 040.

## Spectrum Monitor Screens

The following SMONitor commands are used to set the controls and parameters associated with the screens for Spectrum Monitor measurements and Pass/Fail test results.

**Table 4-16 SMONitor Command Cross Reference**

Item	Command
Averaging Function	TESTs:MANual:SMONitor:AVERage OFF <int> TESTs:MANual:SMONitor:AVERage?
BS Level	TESTs:MANual:SMONitor:AMPLitude <real> TESTs:MANual:SMONitor:AMPLitude?
DC Power Voltage	TESTs:MANual:SMONitor:DCPower:VOLT <real> TESTs:MANual:SMONitor:DCPower:VOLT?
Power Control Level	TESTs:MANual:SMONitor:PLEvel <int> TESTs:MANual:SMONitor:PLEvel?
Resolution Bandwidth	TESTs:MANual:SMONitor:RBWidth 10k 30k TESTs:MANual:SMONitor:RBWidth?
Spectrum Marker Measurement	TESTs:MANual:SMONitor:RESults:MARKer?
Spectrum Marker Position Control	TESTs:MANual:SMONitor:RESults:MARKer:POINT UP DOWN TESTs:MANual:SMONitor:RESults:MARKer:POINT <int> TESTs:MANual:SMONitor:RESults:MARKer:POINT?
Spectrum Measurement	TESTs:MANual:SMONitor:RESults?
Traffic Channel	TESTs:MANual:SMONitor:CHANnel <int> TESTs:MANual:SMONitor:CHANnel?
Traffic Channel Frequency	TESTs:MANual:SMONitor:FREQuency <real> TESTs:MANual:SMONitor:FREQuency?

## Print Screen Function

The following HCOPy subsystem commands are used to control the printing function of the GSM MS Test Set:

**Table 4-17 HCOPy Subsystem Command Cross Reference**

Item	Command
Abort Printing	:HCOPy:ABORt
Dump Screen Image	:HCOPy:SDUMp
Print All Items	:HCOPy:ITEM:ALL

## SIGNAL GENERATOR Screen

**NOTE** This section is applicable only for GSM Test Sets with Option 002.

The following RFGenerator subsystem commands are used to configure the functions and parameters for RF signal generation.

**Table 4-18 RFGenerator Subsystem Command Cross Reference**

Item	Command
DC Power Mode	RFGenerator:DCPower:MODE ON OFF 1 0 RFGenerator:DCPower:MODE?
DC Power Voltage	RFGenerator:DCPower:VOLT <real> RFGenerator:DCPower:VOLT?
Level	RFGenerator:AMPLitude <real> RFGenerator:AMPLitude?
Modulation Function	RFGenerator:MODulation OFF PN9 ALL_0 RFGenerator:MODulation?
Radio Standard	RFGenerator:RFormat GSM900 E-GSM DCS1800 PCS1900 RFGenerator:RFormat?
RF Signal Output	RFGenerator:RFOutput ON OFF 1 0 RFGenerator:RFOutput?
Traffic Channel	RFGenerator:CHANnel <int> RFGenerator:CHANnel?
Traffic Channel Frequency	RFGenerator:FREQuency <real> RFGenerator:FREQuency?



## SPECTRUM MONITOR Screens

**NOTE** This section is applicable only for GSM Test Sets with Option 002.

The following SMONitor subsystem commands are used to set the controls and parameters associated with the SPECTRUM MONITOR screens.

**Table 4-19 SMONitor Subsystem Command Cross Reference**

Item	Command
Averaging Function	SMONitor:AVERage OFF <int> SMONitor:AVERage?
DC Power Mode	SMONitor:DCPower:MODE ON OFF 1 0 SMONitor:DCPower:MODE?
DC Power Voltage	SMONitor:DCPower:VOLT <real> SMONitor:DCPower:VOLT?
Display Span	SMONitor:SPAN 400k 100k SMONitor:SPAN?
Measurement Range	SMONitor:RANGe -3DBM +9DBM +19DBM +29DBM +39DBM SMONitor:RANGe?
Marker Measurement	SMONitor:RESults:MARKer?
Marker Position Control	SMONitor:RESults:MARKer:POINT UP DOWN SMONitor:RESults:MARKer:POINT <int> SMONitor:RESults:MARKer:POINT?
Radio Standard	SMONitor:RFORmat GSM900 E-GSM DCS1800 PCS1900 SMONitor:RFORmat?
Resolution Bandwidth	SMONitor:RBWidth 10k 30k SMONitor:RBWidth?
Spectrum Monitor Measurement	SMONitor:RESults?
Traffic Channel	SMONitor:CHANnel <int> SMONitor:CHANnel?
Traffic Channel Frequency	SMONitor:FREQuency <real> SMONitor:FREQuency?

## System Control Function

The following SYSTem subsystem commands are used to control and query the system status of the GSM MS Test Set:

**Table 4-20 SYSTem Subsystem Command Reference**

Item	Command
Lock System Panel	:SYSTem:KLOCK ON OFF 1 0 :SYSTem:KLOCK?
Softkey Memory	:SYSTem:MEMory:AMPLitude <real 1>,<real 2> :SYSTem:MEMory:AMPLitude?  :SYSTem:MEMory:CHANnel <int 1>,<int 2> :SYSTem:MEMory:CHANnel?  :SYSTem:MEMory:PLEVel <int 1>,<int 2> :SYSTem:MEMory:PLEVel?
System Error	:SYSTem:ERRor?
System Setup	:SYSTem:SETup <strings> :SYSTem:SETup?

## Trigger Function

The following TRIGger subsystem commands are used to control the trigger function of the GSM MS Test Set:

**Table 4-21 TRIGger Subsystem Command Cross Reference**

Item	Command
Abort	:TRIGger:ABORt
Trigger Mode	:TRIGger:MODE SINGle CONTInuous :TRIGger:MODE?
Trigger Immediately	:TRIGger:IMMediate

---

## 5 Example Programs

This chapter contains a few example programs to be used for testing GSM900, E-GSM, DCS1800, or PCS1900 mobile phones with the Test Set.

These are tested with the firmwares available at printing this guide, however, you need to change some commands and queries according to the firmware update.

---

## MANUAL TEST SYNC Mode Sample Program

This HP BASIC sample program makes a measurement of Peak TX Power and Burst Timing with the MANUAL TEST synchronous mode on a DCS1800 mobile phone.

CLEAR and RESET the controller, and type the following commands and Run the program:

```
1000! re-save "a:\mantest.bas"
1010 Serial_port=9
1020 !
1030 !***** Configuration
1040 !
1050 OUTPUT Serial_port;"*RST"
1060 OUTPUT Serial_port;"DISP:CONF"
1070 OUTPUT Serial_port;"CONF:LOSS ON"
1080 OUTPUT Serial_port;"CONF:LOSS:RFIN 0.5,0.5,0.5,0.5"
1090 OUTPUT Serial_port;"CONF:LOSS:RFOU 1.0,1.0,1.0,1.0"
1100 OUTPUT Serial_port;"DISP:CONF:COND"
1110 OUTPUT Serial_port;"CONF:COND:RFOU ON"
1120 !
1130 OUTPUT Serial_port;"DISP:MAN:SYNC:STBY"
1140 OUTPUT Serial_port;"TEST:MAN:RFOR DCS1800"
1150 OUTPUT Serial_port;"TEST:MAN:MBAN OFF"
1160 OUTPUT Serial_port;"TEST:MAN:DCP:VOLT 3.6" ! CAUTION: Change the voltage
value for your mobile phone.
1170 OUTPUT Serial_port;"TEST:MAN:DCP:MODE ON"
1180 !
1190 !***** DC Current Measurements
1200 !
1210 DISP "Turn on the mobile phone and wait until 001-01 is displayed. Then press
CONTINUE."
1220 PAUSE
1230 DISP
1240 !
1250 OUTPUT Serial_port;"TEST:MAN:MEAS:MSC"
1260 OUTPUT Serial_port;"DISP:MAN:CURREN"
1270 OUTPUT Serial_port;"TRIG:MODE SING"
1280 OUTPUT Serial_port;"TRIG:IMM"
1290 REPEAT
```

```

1300 OUTPUT Serial_port;"*STB?"
1310 ENTER Serial_port;H
1320 UNTIL BIT(H,0)=1
1330 !
1340 OUTPUT Serial_port;"TEST:MAN:CURR:RES:CAMP?"
1350 ENTER Serial_port;A,B,C
1360 SELECT A
1370 CASE 0
1380 IF B=0 THEN
1390 Result$="PASS"
1400 ELSE
1410 Result$="FAIL"
1420 END IF
1430 PRINT "DC Current Camp On: ",C*1000,"mA",Result$
1440 CASE ELSE
1450 PRINT "DC Current Camp On: Measurement invalid."
1460 END SELECT
1470 !
1480 DISP "Execute MS Call and press CONTINUE."
1490 PAUSE
1500 DISP
1510 !
1520 REPEAT
1530 OUTPUT Serial_port;"TEST:MAN:MEAS:SIGN:STAT?"
1540 ENTER Serial_port;F
1550 UNTIL BIT(F,1)=1
1560 !
1570 OUTPUT Serial_port;"DISP:MAN:CURR"
1580 OUTPUT Serial_port;"TRIG:MODE SING"
1590 OUTPUT Serial_port;"TRIG:IMM"
1600 !
1610 REPEAT
1620 OUTPUT Serial_port;"*STB?"
1630 ENTER Serial_port;H
1640 UNTIL BIT(H,0)=1
1650 !
1660 OUTPUT Serial_port;"TEST:MAN:CURR:RES:TALK?"
1670 ENTER Serial_port;A,B,C
1680 SELECT A

```

```
1690 CASE 0
1700 IF B=0 THEN
1710   Result$="PASS"
1720 ELSE
1730   Result$="FAIL"
1740 END IF
1750 PRINT "DC Current Talk: ",C*1000,"mA",Result$
1760 CASE 1
1770 PRINT "DC Current Talk: Measurement invalid."
1780 END SELECT
1790 !
1800 !***** Peak TX Power Measurements
1810 !
1820 OUTPUT Serial_port;"DISP:MAN:TPOW"
1830 OUTPUT Serial_port;"TRIG:MODE SING"
1840 OUTPUT Serial_port;"TRIG:IMM"
1850 !
1860 REPEAT
1870 OUTPUT Serial_port;"*STB?"
1880 ENTER Serial_port;H
1890 UNTIL BIT(H,0)=1
1900 !
1910 OUTPUT Serial_port;"TEST:MAN:TXAM:RES:TPOW?"
1920 ENTER Serial_port;A,B,C
1930 IF A=1 THEN
1940 PRINT "Peak TX Power: Measurement invalid."
1950 ELSE
1960 IF B=0 THEN
1970   Result$="PASS"
1980 ELSE
1990   Result$="FAIL"
2000 END IF
2010 PRINT "Peak TX Power: ",C,"dBm",Result$
2020 END IF
2030!
2040 OUTPUT Serial_port;"TEST:MAN:MEAS:BSR"
2050 REPEAT
2060 OUTPUT Serial_port;"TEST:MAN:MEAS:SIGN:STAT?"
2070 ENTER Serial_port;F
```

```
2080 UNTIL BIT(F,4)=1
2090 DISP "Measurement End."
2100 END
```

**Table 5-1 Program Comments (SYNC)**

1050	Resets the Test Set to the default settings for programming.
1060	Displays the CONFIGURATION screen.
1070	Activates the Attenuation function.
1080	Sets the Attenuation RF Input field.
1090	Sets the Attenuation RF Output field.
1100	Displays the Test Condition screen of CONFIGURATION.
1110	Sets the RF Output field to On.
1130	Displays the Stand-by screen with the Synchronous mode.
1140	Sets the Radio Standard field to DCS1800.
1150	Sets the Multi Band field to Off.
1160	Sets the DC Power voltage.
1170	Sets the DC Power mode to On.
1210 to 1230	Waits until the mobile phone camps on as instructed.
1250	Sets to make MS Call.
1260	Displays the DC Current measuring screen.
1270	Sets the Trigger Mode to Single.
1280	Sends a trigger to measure Camp On DC Current.
1290 to 1320	Waits until the Camp On DC Current measurement ends.
1340	Queries the Camp On DC Current results.
1350	Enters the status and measurement data.
1360 to 1460	Prints the test result data.
1480 to 1500	Waits until the MS Call is executed.
1520 to 1550	Waits until the test flow shifts to Talk/RF Test.
1570	Displays the DC Current measuring screen.
1580	Sets the Trigger Mode to Single.
1590	Sends a trigger to measure Talk DC Current.
1610 to 1640	Waits until the Talk DC Current measurement ends.
1660	Queries the Talk DC Current results.



1670	Enters the status and measurement data.
1680 to 1780	Prints the test result data.
1820	Displays the Peak TX Power measuring screen.
1830	Sets the Trigger Mode to Single.
1840	Sends a trigger to measure Peak TX Power.
1860 to 1890	Waits until the Peak TX Power measurement ends.
1910	Queries the Peak TX Power results.
1920	Enters the status and measurement data.
1930 to 2020	Prints the test result data.
2040	Executes the BS Release.
2050 to 2080	Waits until the release is complete.
2090	Displays “Measurement End”.
2100	Ends this program.

## MANUAL TEST GPRS Mode Sample Program

This HP BASIC sample program makes each measurement on Peak TX Power, Frequency Error, and Sensitivity BLER with the MANUAL TEST GPRS mode on a GSM mobile phone.

CLEAR and RESET the controller, and type the following commands and Run the program:

```

1000! re-save "A:\GPRStest.bas"
1010 Serial_port=9
1020 !
1030 !***** Configuration
1040 !
1050 OUTPUT Serial_port;"*RST"
1060 OUTPUT Serial_port;"DISP:CONF"
1070 OUTPUT Serial_port;"CONF:LOSS ON"
1080 OUTPUT Serial_port;"CONF:LOSS:RFIN 15.0,0.5,0.5,0.5"
1090 OUTPUT Serial_port;"CONF:LOSS:RFOU 15.0,1.0,1.0,1.0"
1100 OUTPUT Serial_port;"DISP:CONF:COND"
1110 OUTPUT Serial_port;"CONF:COND:RFOU ON"
1120 OUTPUT Serial_port;"CONF:COND:SENS:LEV -80.0"
1130 WAIT .3
1140 !
1150 OUTPUT Serial_port;"DISP:MAN:GPRS:STBY"
1160 OUTPUT Serial_port;"TEST:MAN:RFOR GSM900"
1170 OUTPUT Serial_port;"TEST:MAN:BCCH:CHAN 20"
1180 OUTPUT Serial_port;"TEST:MAN:TCH:CHAN 60"
1190 OUTPUT Serial_port;"TEST:MAN:MBAN OFF"
1200 OUTPUT Serial_port;"TEST:MAN:DCP:MODE OFF"
1210 OUTPUT Serial_port;"TEST:MAN:MSL 4"
1220 OUTPUT Serial_port;"TEST:MAN:SCON 2x1"
1230 OUTPUT Serial_port;"TEST:MAN:SENS BLER"
1240 WAIT .3
1250 !
1260 !***** GPRS Mode Test Start
1270 !
1280 DISP "Turn on the mobile phone, then press CONTINUE."
1290 PAUSE
1300 DISP
1310 !
1320 OUTPUT Serial_port;"TRIG:IMM"
1330 OUTPUT Serial_port;"DISP:MAN:MEAS"
1340 REPEAT
1350   OUTPUT Serial_port;"TEST:MAN:MEAS:SIGN:STAT?"
1360   ENTER Serial_port;H
1370   WAIT .1
1380   UNTIL BIT(H,1)=1
1390 !
1400 !***** Peak TX Power Measurements
1410 !
1420 OUTPUT Serial_port;"DISP:MAN:TPOW"
1430 OUTPUT Serial_port;"TRIG:MODE SING"

```

```
1440 WAIT 2
1450 OUTPUT Serial_port;"TRIG:IMM"
1460 !
1470 REPEAT
1480  OUTPUT Serial_port;"*STB?"
1490  ENTER Serial_port;H
1500  WAIT .1
1510  UNTIL BIT(H,0)=1
1520  !
1530  OUTPUT Serial_port;"TEST:MAN:TXAM:RES:TPOW?"
1540  ENTER Serial_port;A,B,C
1550  IF A=1 THEN
1560    PRINT "Peak TX Power: Measurement invalid."
1570  ELSE
1580    IF B=0 THEN
1590      Result$="PASS"
1600    ELSE
1610      Result$="FAIL"
1620    END IF
1630    PRINT "Peak TX Power: ",C,"dBm",Result$
1640  END IF
1650  OUTPUT Serial_port;"DISP:MAN:MEAS"
1660  WAIT 2
1670  !
1680  !***** Frequency Error Measurements
1690  !
1700  OUTPUT Serial_port;"DISP:MAN:PHAS"
1710  OUTPUT Serial_port;"TRIG:MODE SING"
1720  WAIT 2
1730  OUTPUT Serial_port;"TRIG:IMM"
1740  !
1750  REPEAT
1760    OUTPUT Serial_port;"*STB?"
1770    ENTER Serial_port;H
1780    WAIT .1
1790    UNTIL BIT(H,0)=1
1800    !
1810    OUTPUT Serial_port;"TEST:MAN:TXFR:RES:FREQ?"
1820    ENTER Serial_port;A,B,C
1830    IF A=1 THEN
1840      PRINT "Frequency Error: Measurement invalid."
1850    ELSE
1860      IF B=0 THEN
1870        Result$="PASS"
1880      ELSE
1890        Result$="FAIL"
1900      END IF
1910      PRINT "Frequency Err: ",C,"Hz",Result$
1920    END IF
1930    OUTPUT Serial_port;"DISP:MAN:MEAS"
1940    WAIT 2
1950    !
1960    !***** Sensitivity Measurements
1970    !
1980    OUTPUT Serial_port;"DISP:MAN:SENS"
```

```

1990 OUTPUT Serial_port;"TRIG:MODE SING"
2000 WAIT 2
2010 OUTPUT Serial_port;"TRIG:IMM"
2020 !
2030 REPEAT
2040 OUTPUT Serial_port;"*STB?"
2050 ENTER Serial_port;H
2060 WAIT .1
2070 UNTIL BIT(H,0)=1
2080 !
2090 OUTPUT Serial_port;"TEST:MAN:RX:RES:SENS?"
2100 ENTER Serial_port;A,B,C,D
2110 IF A=1 AND BIT(B,1)=1 THEN
2120 PRINT "Sensitivity BLER Measurement invalid."
2130 ELSE
2140 IF BIT(B,1)=0 THEN
2150 Result$="PASS"
2160 ELSE
2170 Result$="FAIL"
2180 END IF
2190 PRINT "BLER      : ",D,"% ",Result$
2200 END IF
2210 OUTPUT Serial_port;"DISP:MAN:MEAS"
2220 WAIT 2
2230 !
2240 OUTPUT Serial_port;"TEST:MAN:MEAS:END"
2250 REPEAT
2260 OUTPUT Serial_port;"TEST:MAN:MEAS:SIGN:STAT?"
2270 ENTER Serial_port;F
2280 WAIT .1
2290 UNTIL BIT(F,4)=1
2300 DISP "Measurement End."
2310 END

```

**Table 5-2 Program Comments**

1050	Resets the Test Set to the default settings for programming.
1060	Displays the CONFIGURATION screen.
1070	Activates the Attenuation function.
1080	Sets the Attenuation RF Input field.
1090	Sets the Attenuation RF Output field.
1100	Displays the Test Condition screen of CONFIGURATION.
1110	Sets the RF Output field to On.
1120	Sets the BER BS Level value to -80.0 dBm.
1150	Displays the Stand-by screen with the GPRS mode.
1160	Sets the Radio Standard field to GSM900.
1170	Sets the BCCH channel number to 20.

1180	Sets the Packet Data TCH channel number to 60.
1190	Sets the Multi Band field to Off.
1200	Sets the DC Power mode to Off.
1210	Sets the Measured Slot to 4.
1220	Sets the Slot Configuration to 2×1.
1230	Sets the Sensitivity in BLER.
1280 to 1300	Displays the instruction message for you to do so.
1320	Sends a trigger with the continuous mode.
1330	Displays the MANUAL TEST GPRS Measuring screen.
1340 to 1380	Monitors the signaling state until it becomes Attached.
1420	Displays the Peak TX Power/Power vs Time measuring screen.
1430	Sets the trigger mode to Single.
1450	Sends a trigger to measure Peak TX Power/Power vs Time.
1470 to 1510	Monitors the status byte until one measurement ends.
1530 to 1540	Queries and enters the status and measurement results.
1550 to 1640	Prints the pass/fail test result and measured data.
1650	Displays the MANUAL TEST GPRS Measuring screen.
1700	Displays the Phase Error/Frequency Error measuring screen.
1710	Sets the trigger mode to Single.
1730	Sends a trigger to measure Phase Error/Frequency Error.
1750 to 1790	Monitors the status byte until one measurement ends.
1810 to 1820	Queries and enters the status and measurement results.
1830 to 1920	Prints the pass/fail test result and measured data.
1930	Displays the MANUAL TEST GPRS Measuring screen.
1980	Displays the Sensitivity measuring screen.
1990	Sets the trigger mode to Single.
2010	Sends a trigger to measure Sensitivity.
2030 to 2070	Monitors the status byte until one measurement ends.
2090 to 2100	Queries and enters the status and measurement results.
2110 to 2200	Prints the pass/fail test result and measured data.
2210	Displays the MANUAL TEST GPRS Measuring screen.
2240	Sends the measurement end command.

2250 to 2290	Waits until the Stand-by screen is displayed.
2300	Displays “Measurement End”.
2310	Ends this program.

## AUTOMATIC TEST Sample Program

This HP BASIC sample program makes an AUTOMATIC TEST on a DCS1800 and E-GSM multi-band mobile phone.

CLEAR and RESET the controller, and type the following commands and Run the program:

```
1000! re-save "a:\autotest.bas"
1010 OPTION BASE 1
1020 DIM Ch(6)
1030 Ch(1)=512
1040 Ch(2)=9999
1050 Ch(3)=9999
1060 Ch(4)=1
1070 Ch(5)=9999
1080 Ch(6)=9999
1090 Serial_port=9
1100 !
1110 !***** Configuration
1120 !
1130 OUTPUT Serial_port;"*RST"
1140 OUTPUT Serial_port;"SYST:KLOC ON"
1150 !
1160 OUTPUT Serial_port;"DISP:CONF"
1170 OUTPUT Serial_port;"CONF:LOSS ON"
1180 OUTPUT Serial_port;"CONF:LOSS:RFIN 0.5,0.5,0.5,0.5"
1190 OUTPUT Serial_port;"CONF:LOSS:RFOU 1.0,1.0,1.0,1.0"
1200 OUTPUT Serial_port;"DISP:CONF:COND"
1210 OUTPUT Serial_port;"CONF:COND:RFOU ON"
1220 !
1230 OUTPUT Serial_port;"DISP:AUTO:STBY"
1240 OUTPUT Serial_port;"TEST:AUTO:SCR DET"
1250 OUTPUT Serial_port;"TEST:AUTO:RFOR DCS1800"
1260 OUTPUT Serial_port;"TEST:AUTO:MBAN GSM900"
1270 OUTPUT Serial_port;"TEST:AUTO:DCP:MODE ON"
1280 OUTPUT Serial_port;"TEST:AUTO:DCP:VOLT 3.6" ! CAUTION: Change the voltage
value for your mobile phone.
1290 FOR I=1 TO 6
1300 OUTPUT Serial_port;"TEST:AUTO:VAR:TCH:CHAN"&VAL$(I)&" "&VAL$(Ch(I))
```

```
1310 NEXT I
1320 !
1330 !***** LOC.Update
1340 !
1350 DISP "Turn on the mobile phone and wait until 001-01 is displayed. Then press
CONTINUE."
1360 PAUSE
1370 DISP
1380 !
1390 OUTPUT Serial_port;"TRIG:IMM"
1400 !
1410 REPEAT
1420  OUTPUT Serial_port;"TEST:AUTO:MEAS:SIGN:STAT?"
1430  ENTER Serial_port;S
1440  UNTIL BIT(S,1)=1
1450  !
1460  !***** MS Call
1470  !
1480  DISP "Execute MS call. Press CONTINUE."
1490  PAUSE
1500  DISP
1510  !
1520  REPEAT
1530  OUTPUT Serial_port;"TEST:AUTO:MEAS:SIGN:STAT?"
1540  ENTER Serial_port;S
1550  UNTIL BIT(S,2)=1
1560  !
1570  !***** Talk
1580  !
1590  INPUT "Talk to the mobile to get its echo. Enter P for Pass or F for Fail.",P$
1600  IF P$="P" OR P$="p" THEN
1610    OUTPUT Serial_port;"TEST:AUTO:MEAS:TALK PASS"
1620  ELSE
1630    OUTPUT Serial_port;"TEST:AUTO:MEAS:TALK FAIL"
1640  END IF
1650  !
1660  !***** RF Test
1670  !
1680  DISP "Executing RF Test..."
```



Example Programs  
**AUTOMATIC TEST Sample Program**

```
1690 REPEAT
1700  OUTPUT Serial_port;"TEST:AUTO:MEAS:SIGN:STAT?"
1710  ENTER Serial_port;S
1720  UNTIL BIT(S,4)=1
1730  !
1740  !***** MS Release
1750  !
1760  DISP "Execute MS Release. Press CONTINUE."
1770  PAUSE
1780  !
1790  !***** BS Call and BS Release
1800  !
1810  DISP "Answer the call. Press CONTINUE."
1820  PAUSE
1830  DISP
1840  !
1850  REPEAT
1860  OUTPUT Serial_port;"TEST:AUTO:MEAS:SIGN:STAT?"
1870  ENTER Serial_port;S
1880  UNTIL BIT(S,7)=1
1890  DISP "Measurement ends."
1900  !
1910  !***** Results Display
1920  !
1930  OUTPUT Serial_port;"TEST:AUTO:RES:ALL?"
1940  ENTER Serial_port;A,B
1950  IF A=0 THEN
1960  PRINT "All Sequences are Passed."
1970  ELSE
1980  IF BIT(A,0)=1 THEN PRINT "LOC.Update failed."
1990  IF BIT(A,1)=1 THEN PRINT "MS Call failed."
2000  IF BIT(A,2)=1 THEN PRINT "Talk failed."
2010  IF BIT(A,3)=1 THEN PRINT "RF Test failed."
2020  IF BIT(A,4)=1 THEN PRINT "MS Release failed."
2030  IF BIT(A,5)=1 THEN PRINT "BS Call failed."
2040  IF BIT(A,6)=1 THEN PRINT "BS Release failed."
2050  END IF
2060  !
2070  IF B<>0 THEN
```

```

2080 IF BIT(B,0)=1 THEN
2090   PRINT "Peak TX Power failed."
2100   FOR I=1 TO 6
2110     OUTPUT Serial_port;"TEST:AUTO:RES:TPOW"&VAL$(I)&"?"
2120     ENTER Serial_port;C,D,E,F,G
2130     PRINT RPT$("
",5);"Ch:";Ch(I),"High:";E;"dBm,","Mid:";F;"dBm","Low:";G;"dBm"
2140   NEXT I
2150 END IF
2160 IF BIT(B,1)=1 THEN PRINT "Burst Timing failed."
2170 IF BIT(B,2)=1 THEN PRINT "Power Ramp failed."
2180 IF BIT(B,3)=1 THEN PRINT "Phase Error failed."
2190 IF BIT(B,4)=1 THEN PRINT "Frequency Error failed."
2200 IF BIT(B,5)=1 THEN PRINT "Sensitivity failed."
2210 IF BIT(B,6)=1 THEN PRINT "RX Quality failed."
2220 IF BIT(B,7)=1 THEN PRINT "RX Level failed."
2230 IF BIT(B,8)=1 THEN PRINT "DC Current failed."
2240 END IF
2250 END

```

**Table 5-3 Program Comments**

1130	Resets the Test Set to the default settings for programming.
1140	Locks all of the front panel key control.
1160	Displays the CONFIGURATION screen.
1170	Activates the Attenuation function.
1180	Sets the Attenuation RF Input field.
1190	Sets the Attenuation RF Output field.
1200	Displays the Test Condition screen.
1210	Sets the RF Output field to On.
1230	Displays the Stand-by screen, AUTOMATIC TEST.
1240	Selects the detailed screen.
1250	Sets the Radio Standard field to DCS1800.
1260	Sets the Multi Band field to GSM900.
1270	Sets the DC Power mode to On.
1280	Sets the DC Power voltage.
1290 and 1310	Sets the channel numbers.

Example Programs  
**AUTOMATIC TEST Sample Program**

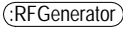
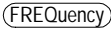



1350 to 1370	Waits until the mobile phone camps on as instructed.
1390	Starts the AUTOMATIC TEST.
1410 to 1440	Waits until the test flow shifts to the MS Call step.
1480 to 1500	Waits until the MS Call is executed.
1520 to 1550	Waits until the test flow shifts to the Talk step.
1590 to 1640	Executes the Talk test.
1680 to 1720	Waits until the RF Tests end and the test flow shifts to MS Release step.
1760 and 1770	Executes the MS Release.
1810 to 1830	Answers the call from the Test Set.
1850 to 1890	Waits until the measurement ends.
1930 and 1940	Queries the test results.
1950 to 2050	Prints the test results of the signaling test flow.
2070 to 2240	Prints the test results of the RF test.
2110 to 2130	Queries the measurement values of the Peak TX Power measurement.

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# A Syntax Diagrams

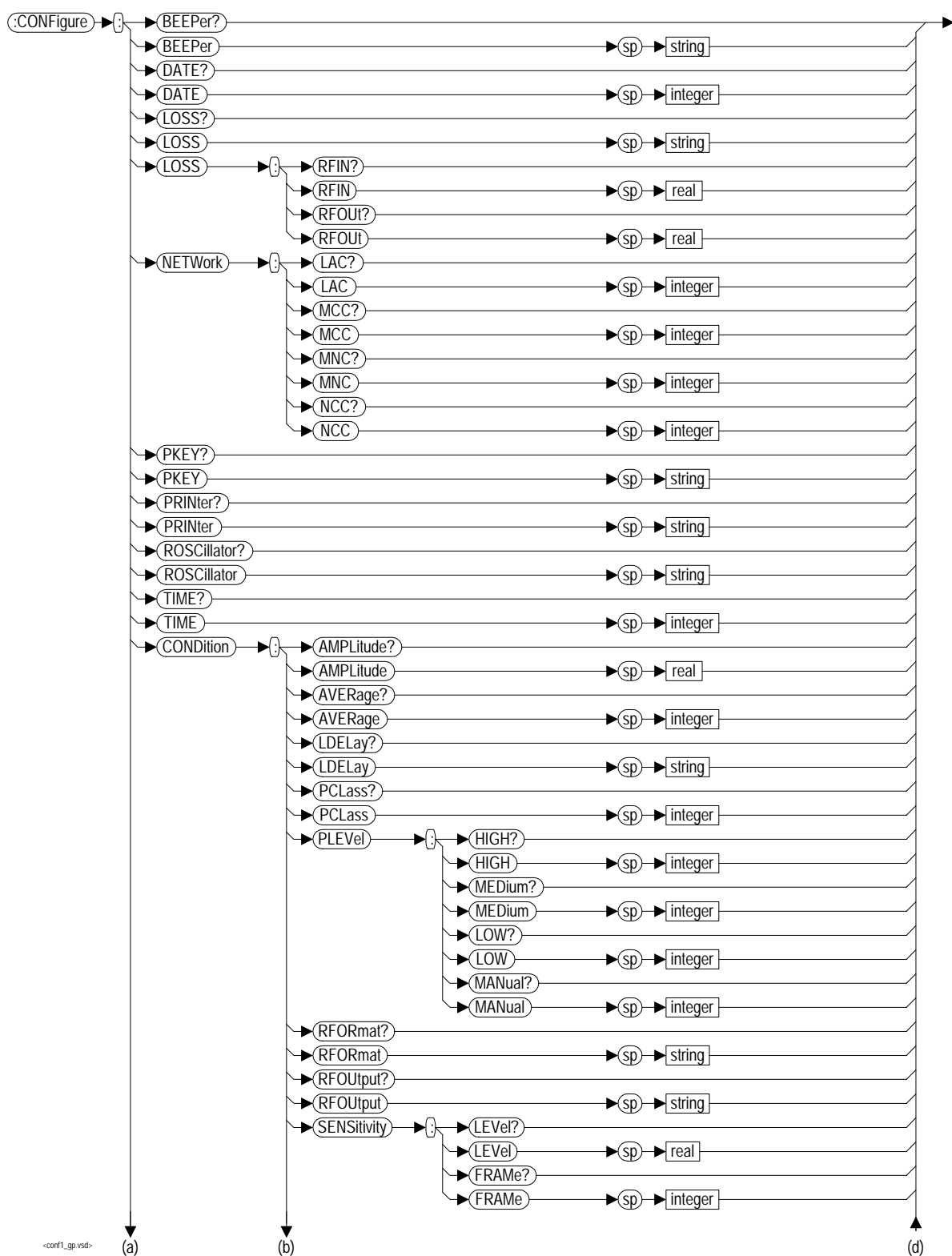
In this Appendix, the syntax diagram for each subsystem command is shown. These diagrams use a graphical format to represent the hierarchical structure of a system.

The following describes two graphical conventions used in the syntax diagrams.

-  : Represents the command subsystem for a function mode.
-  : Represents a command. With a question mark for a query.
-  : Means that a colon must be used between two commands in the line.
-  : Means that a space must be used as part of the command line.
-  : Represents one or multiple parameters for integer, string, or real.

Depending on the installation of the available options, the valid commands will be replaced. Also, query commands will have different return values. Consult with the other sections in this guide or the user's guide for detailed information.

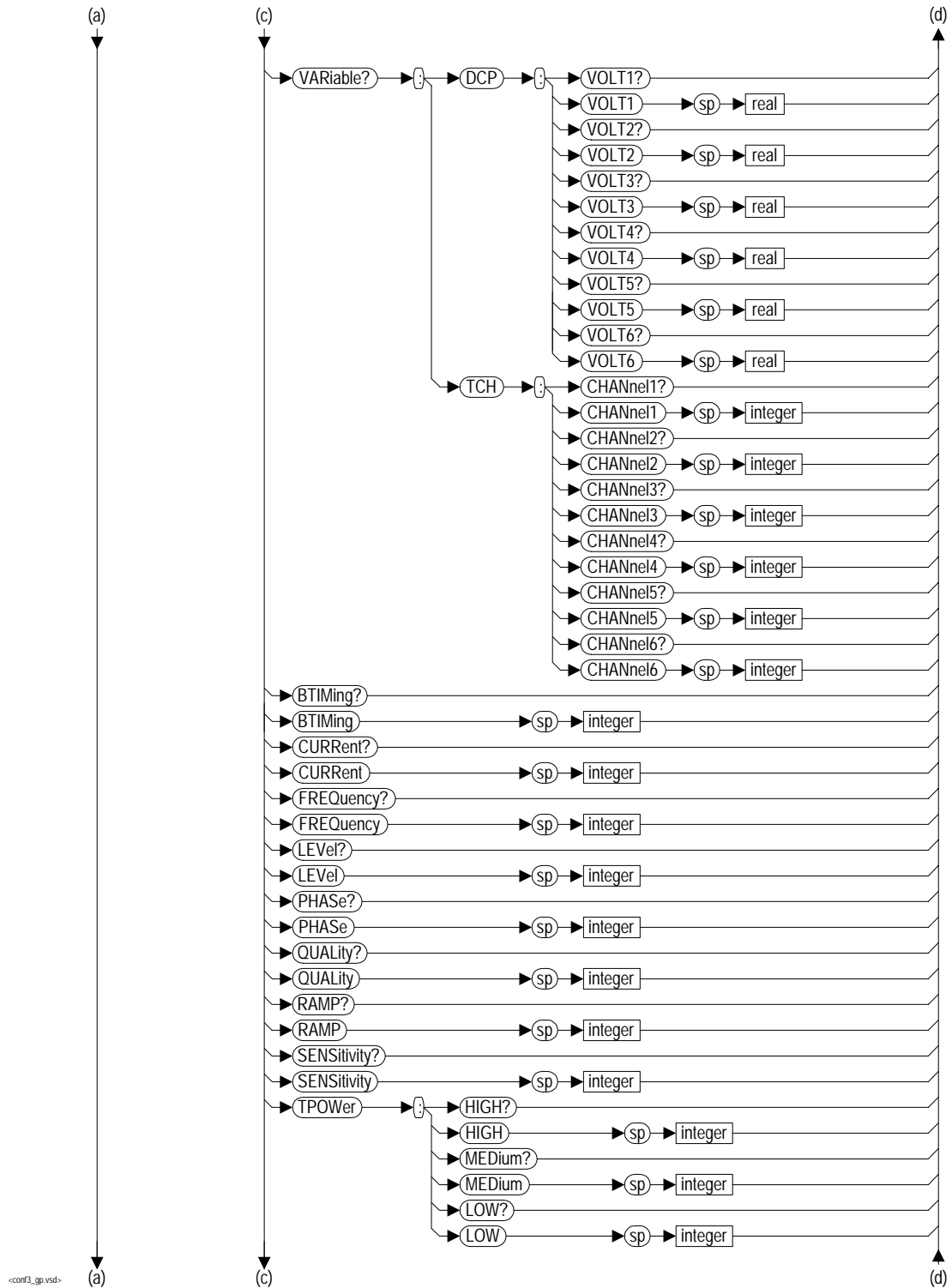
Figure A-1 CONFigure Subsystem (1 of 4)



## Appendix A



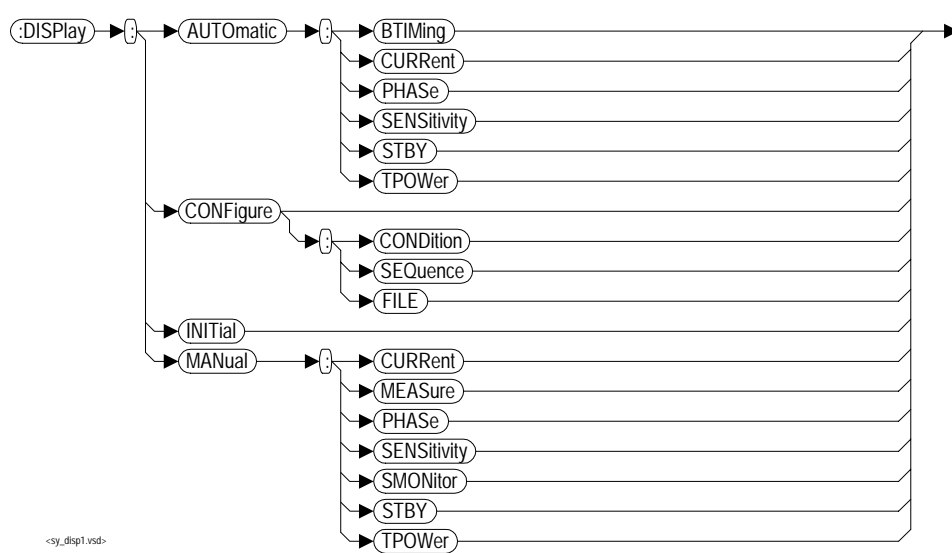
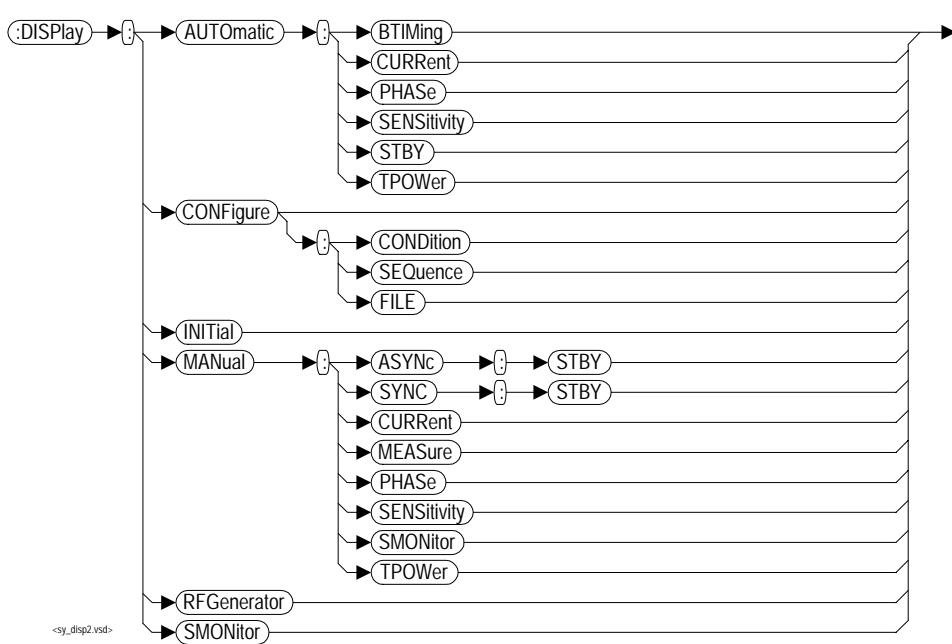
Figure A-3 CONFigure Subsystem (3 of 4)

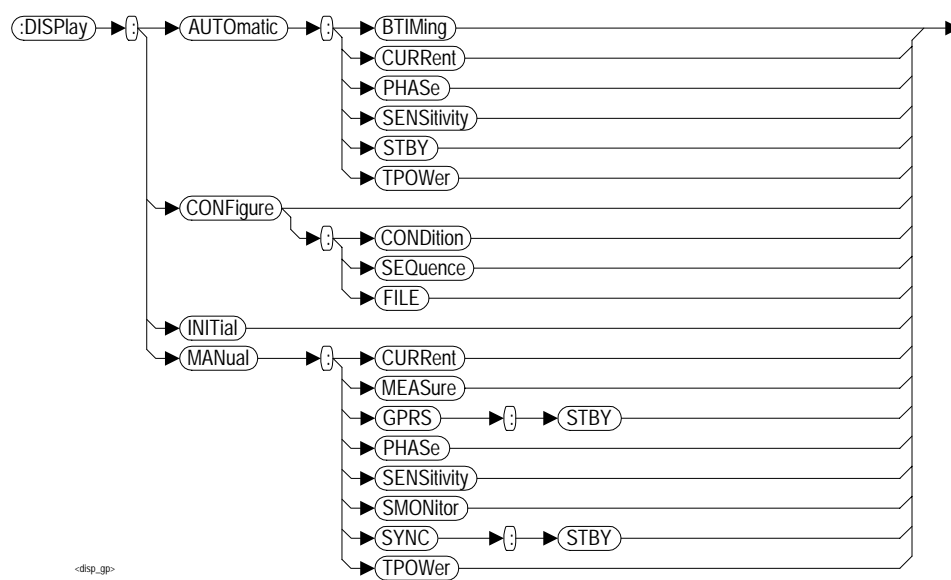
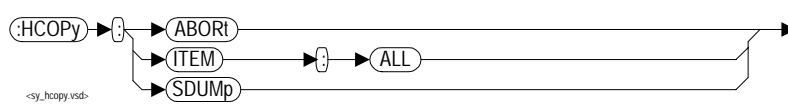
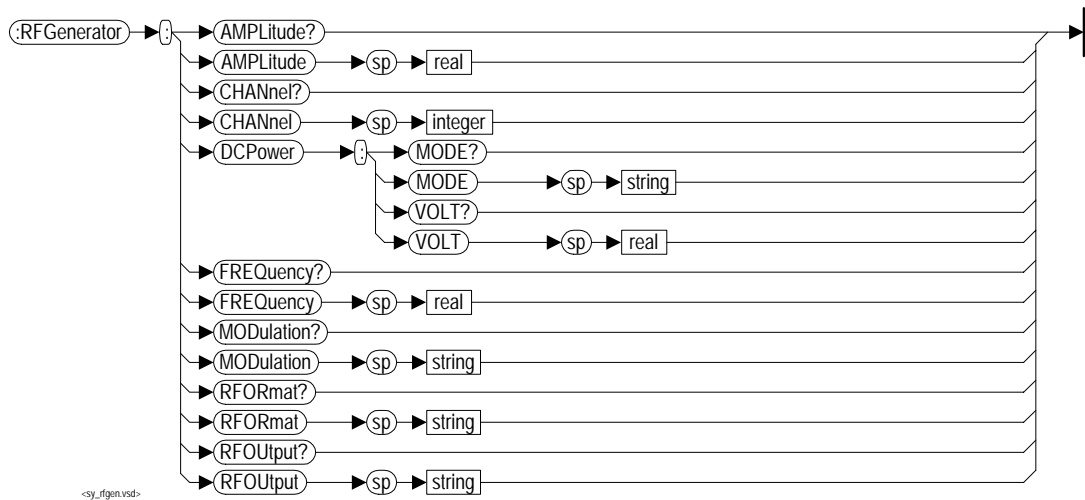


## Appendix A





**Figure A-5    DISPlay Subsystem (without any option)****Figure A-6    DISPlay Subsystem (with Option 002)**

**Figure A-7 DISPlay Subsystem (with Option 040)****Figure A-8 HCOPy Subsystem****Figure A-9 RFGenerator Subsystem (with Option 002)**

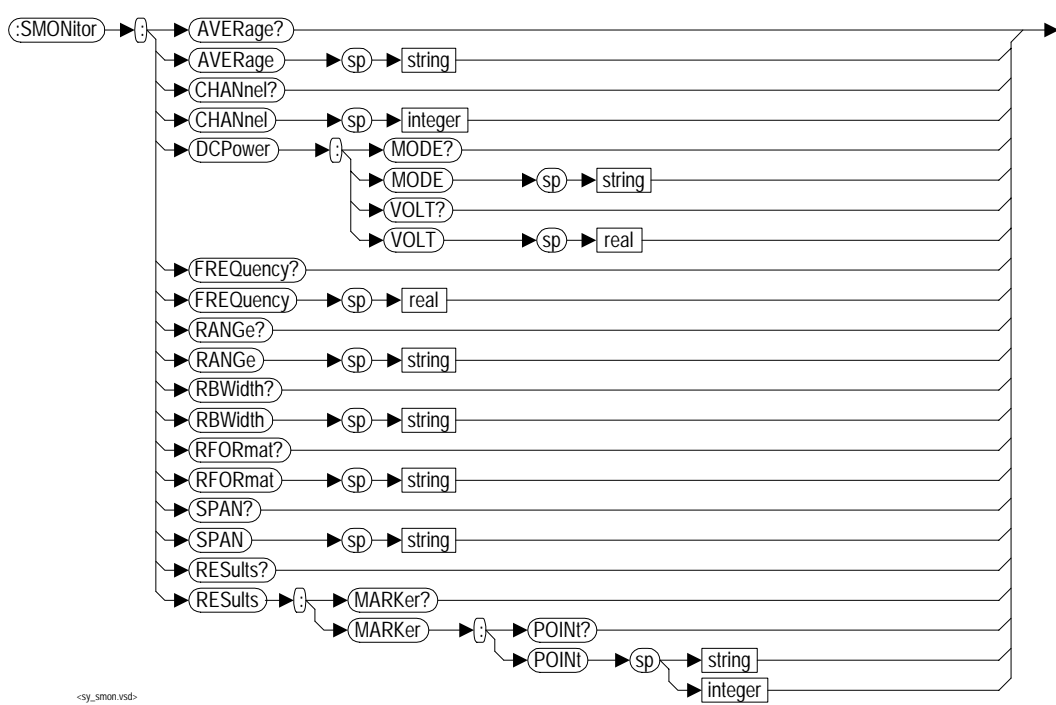
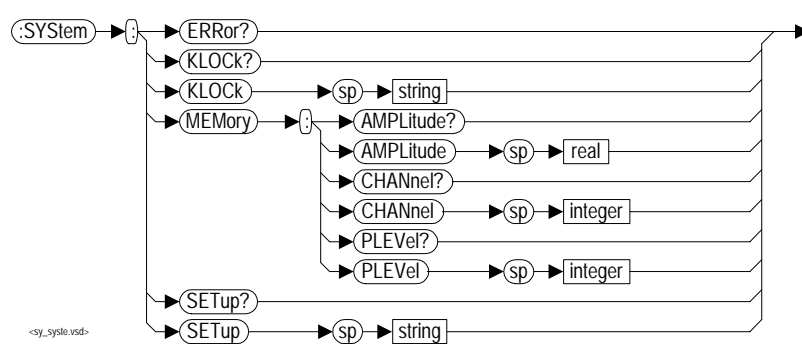
**Figure A-10 SMOonitor Subsystem (with Option 002)****Figure A-11 SYSTem Subsystem**

Figure A-12 TESTs Subsystem for AUTOMATIC TEST (1 of 4)

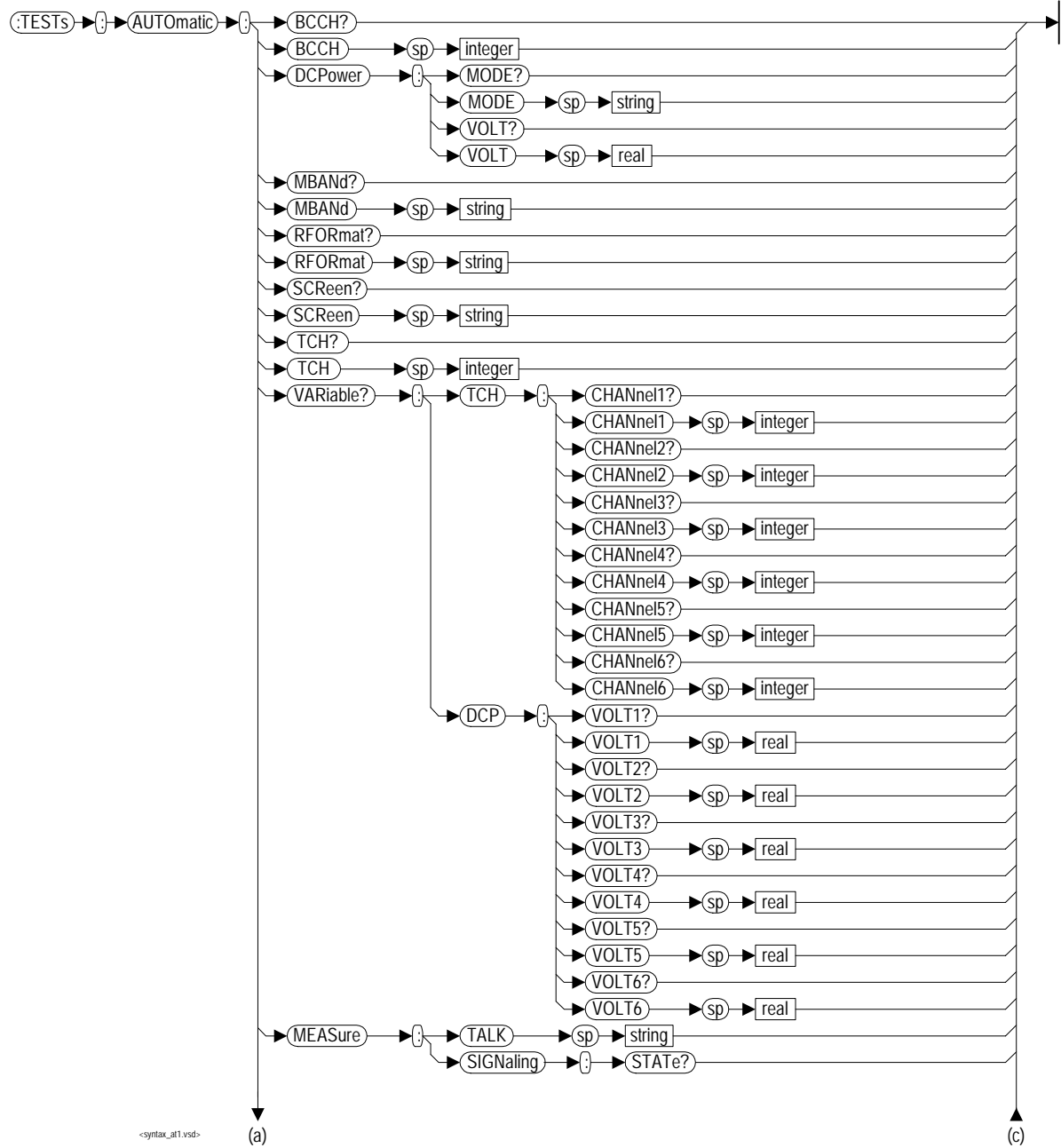


Figure A-13 TESTs Subsystem for AUTOMATIC TEST (2 of 4)

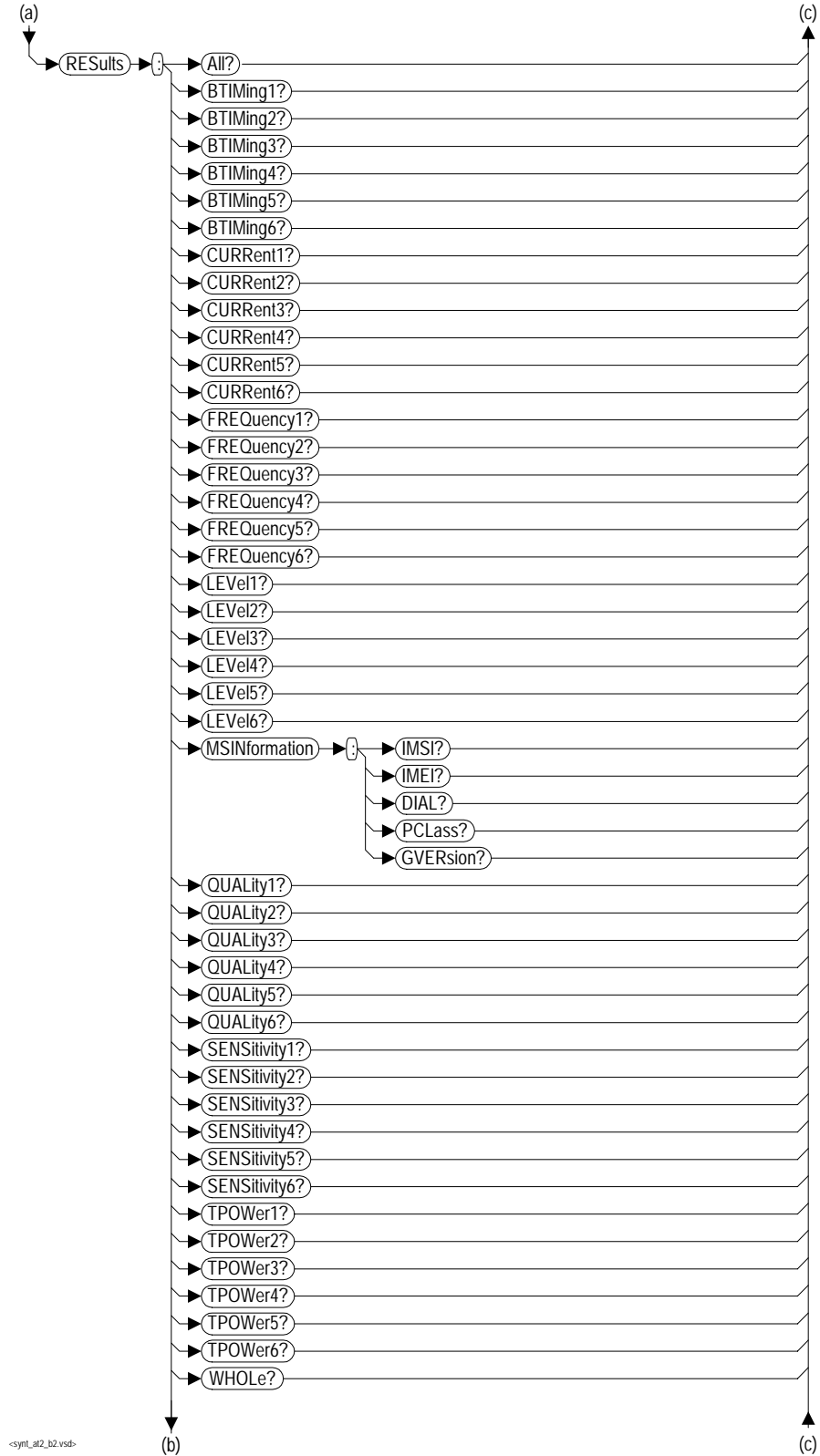


Figure A-14 TESTs Subsystem for AUTOMATIC TEST (3 of 4)

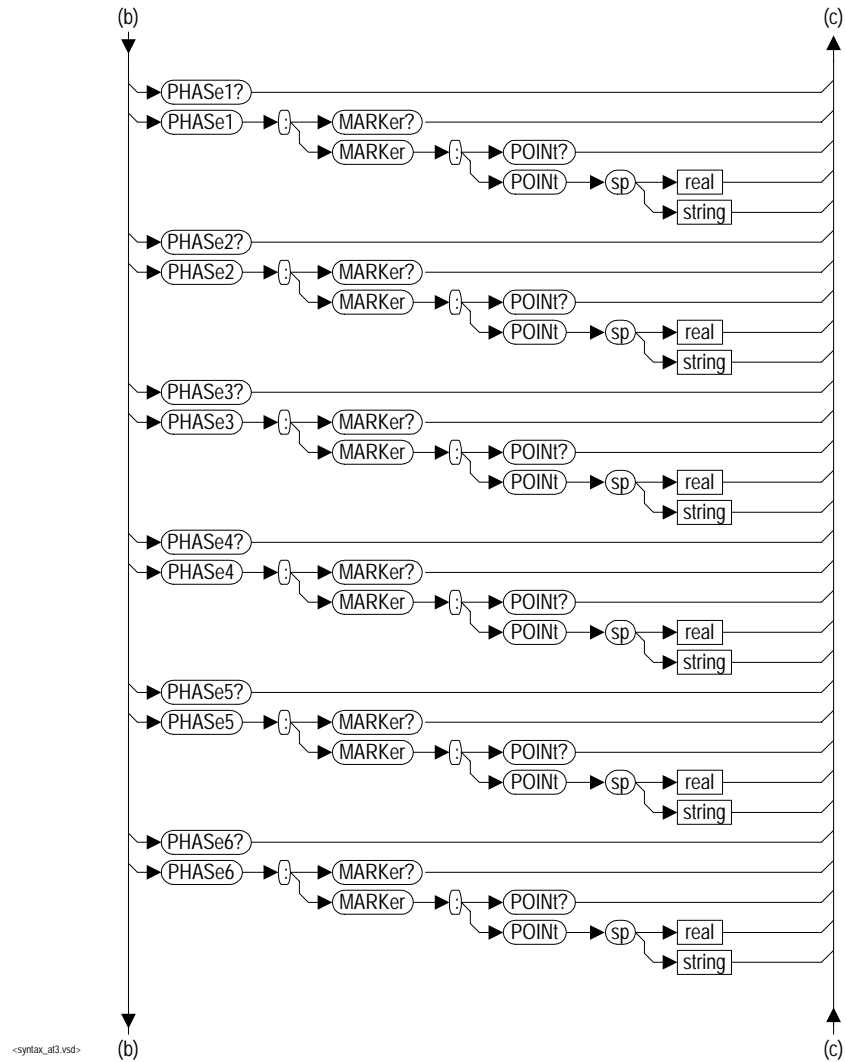


Figure A-15 TESTs Subsystem for AUTOMATIC TEST (4 of 4)

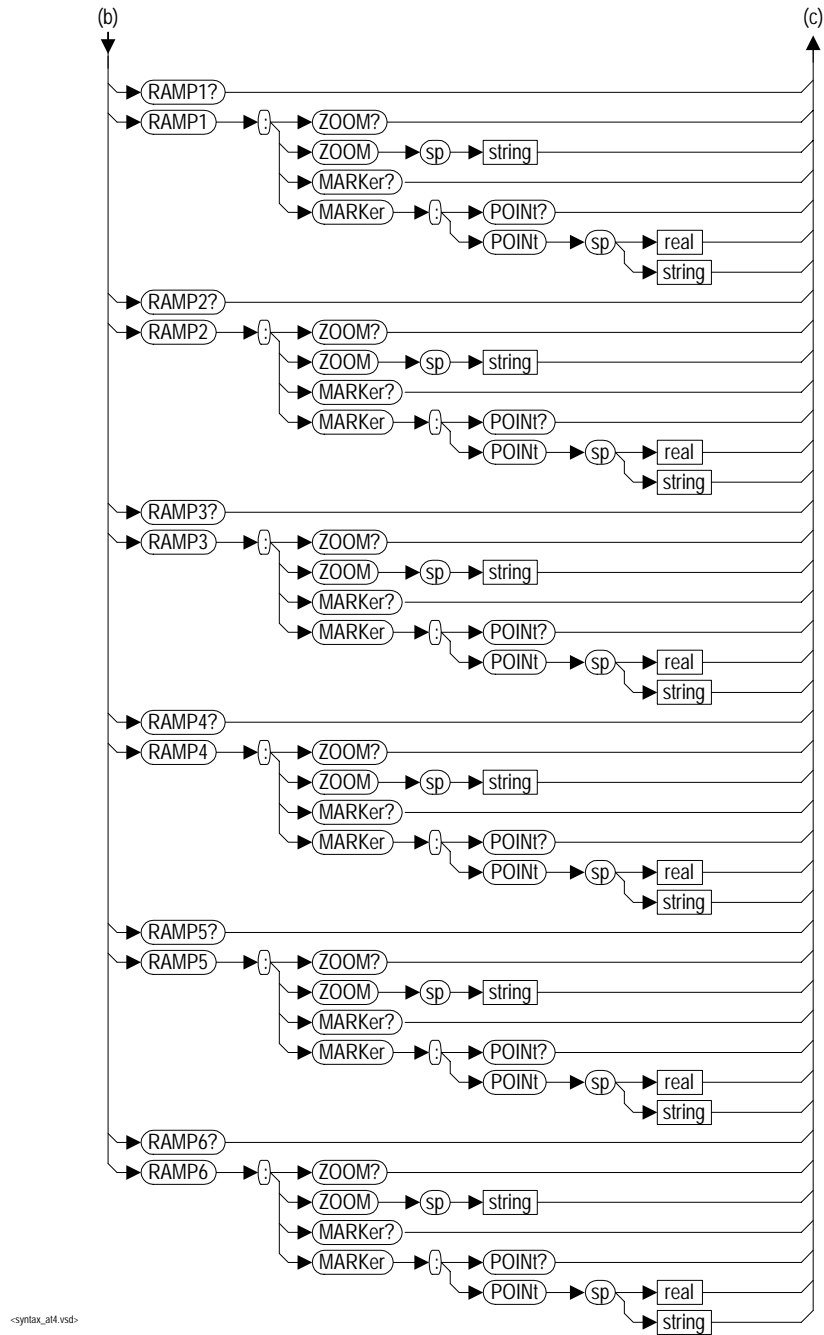


Figure A-16 TESTs Subsystem for MANUAL TEST (1 of 3)

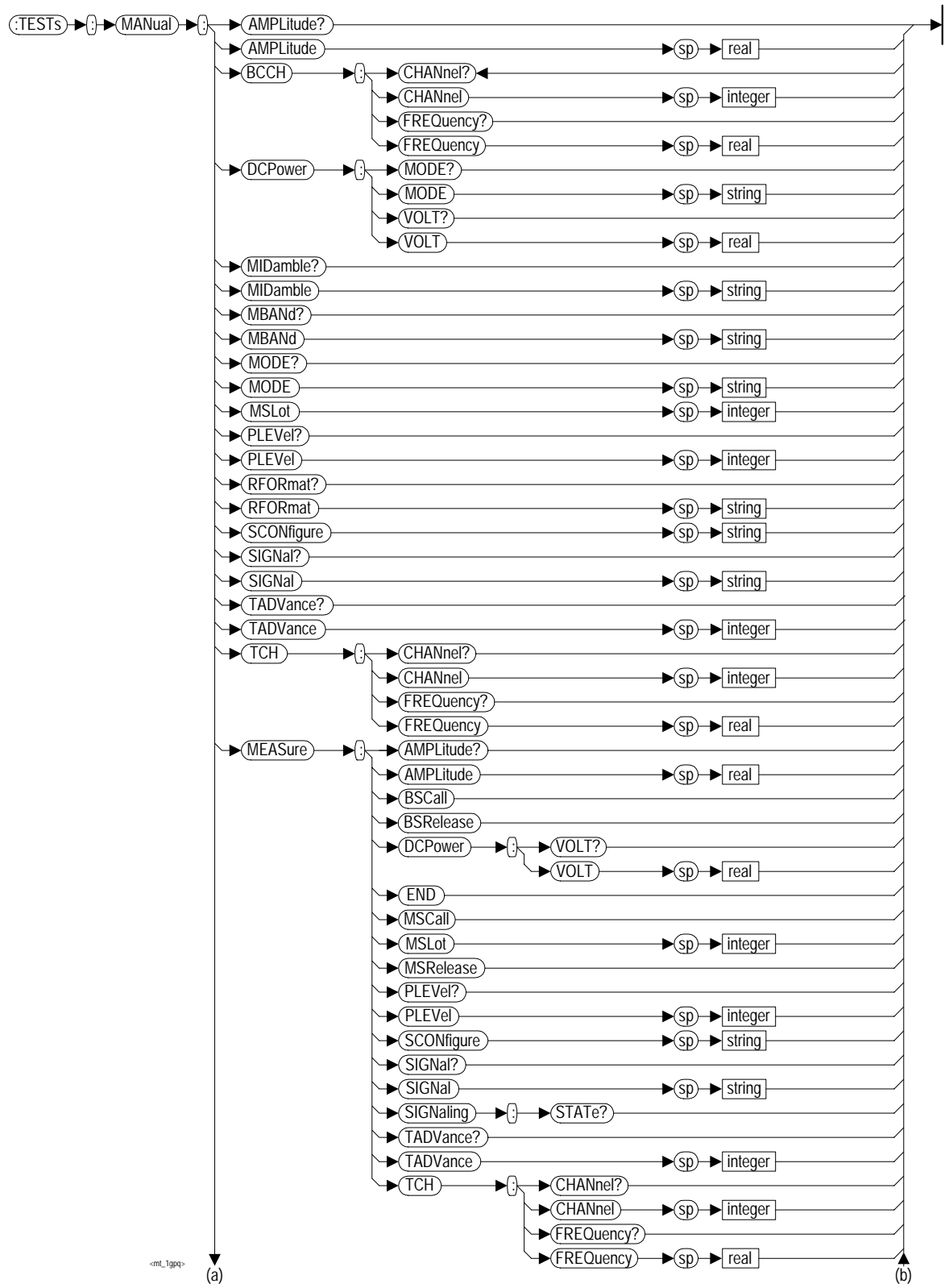




Figure A-17 TESTs Subsystem for MANUAL TEST (2 of 3)

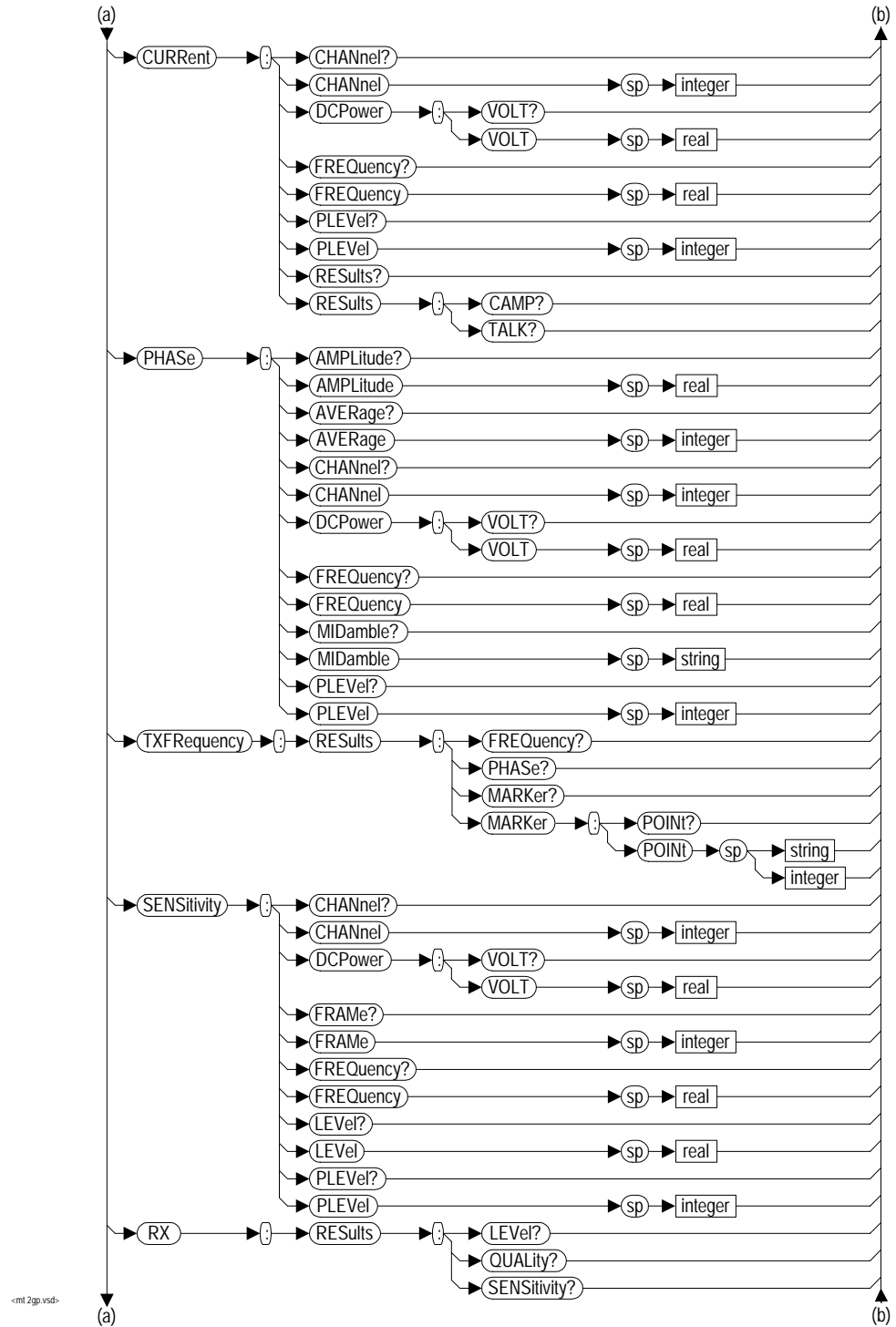
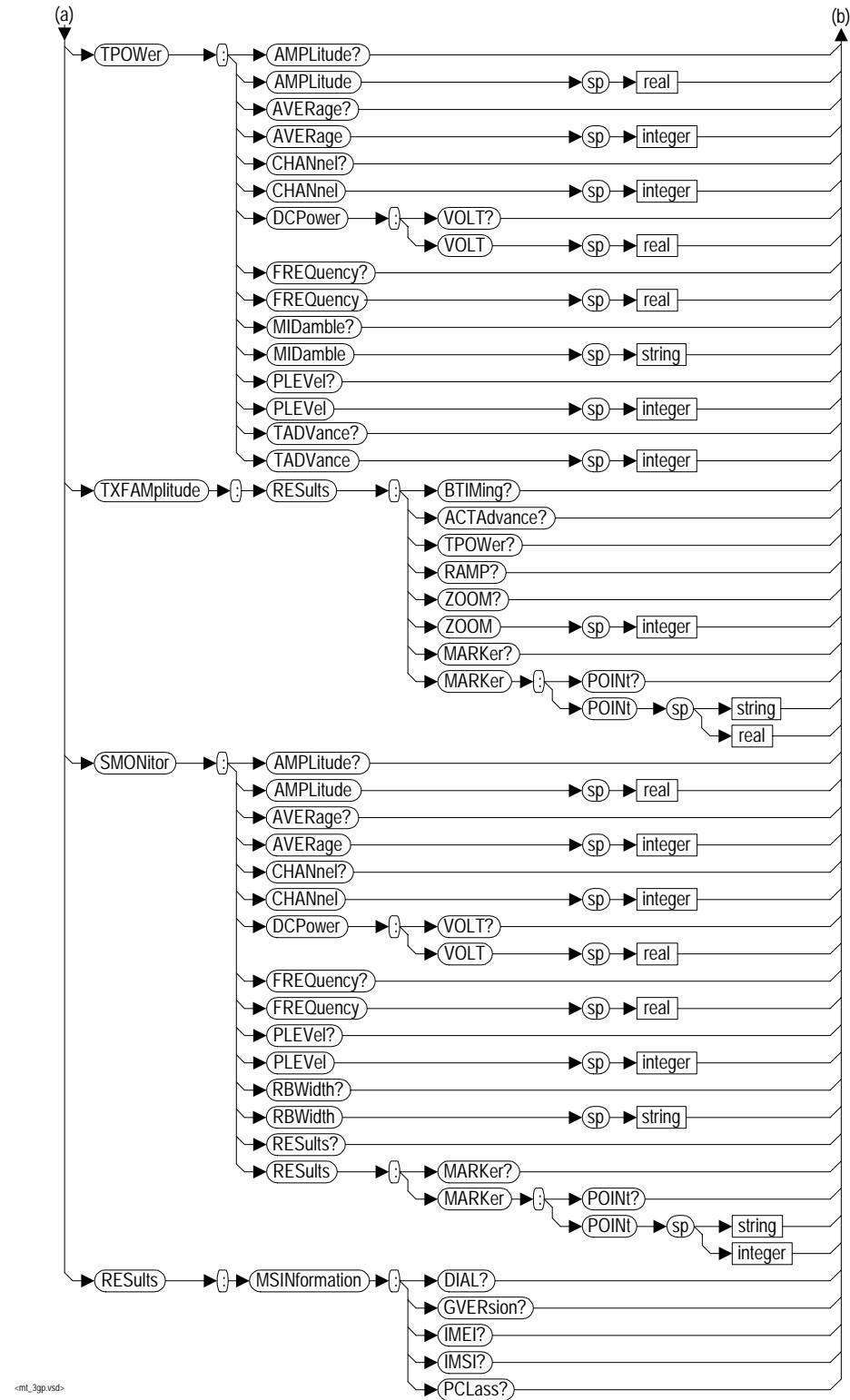
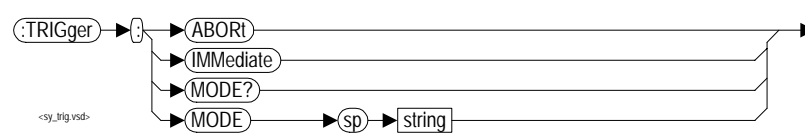


Figure A-18 TESTs Subsystem for MANUAL TEST (3 of 3)



**Figure A-19** TRIGger Subsystem

---

## **B Command Difference between E6392A & E6392B**

This chapter contains the table showing the commands changed from the Agilent E6392A to E6392B. These changes include the commands deleted from the E6392A or newly added to the E6392B.

## Changed Commands

The following table shows the commands of the Agilent E6392A in alphabetical order, which are changed for the Agilent E6392B or deleted from the Agilent E6392A. New commands of the Agilent E6392B are also listed. Higher hierarchical changes are taken into account.

## Comparison Table for Command Difference

E6392A Command	Change	E6392B Command
<b>CONFigure Subsystem</b>		
CONFigure:LOSS:CABLe <real> CONFigure:LOSS:CABLe?	:CABL to :RFIN	CONFigure:LOSS:RFIN <real> CONFigure:LOSS:RFIN?
CONFigure:LOSS:COUPler <real> CONFigure:LOSS:COUPler?	:COUP to :RFOU	CONFigure:LOSS:RFOUt <real> CONFigure:LOSS:RFOUt?
CONFigure:RFConneCtion COUPler CABLe CONFigure:RFConneCtion?	:RFCO to :LOSS	CONFigure:LOSS ON OFF 1 0 CONFigure:LOSS?
	[New] BLER Limit for GPRS Mode	CONFigure:CONDition:LIMit:BLER <real h> CONFigure:CONDition:LIMit:BLER?
<b>DISPlay Subsystem</b>		
DISPlay:AUTO:CONDition	:AUTO to :CONF	DISPlay:CONFigure:CONDition
DISPlay:AUTO:SEquence		DISPlay:CONFigure:SEquence
DISPlay:AUTO:SRECall		DISPlay:CONFigure:FILE
DISPlay:MANual:CONDition	:MAN to :CONF	DISPlay:CONFigure:CONDition
DISPlay:MANual:SRECall		DISPlay:CONFigure:FILE
	Initial Screen	DISPlay:INITial
	Stand-by for Async Mode	DISPlay:MANual:ASYN:STBY
	Stand-by for Sync Mode	DISPlay:MANual:SYNC:STBY
	Stand-by for GPRS Mode	DISPlay:MANual:GPRS:STBY
<b>RFGenerator Subsystem</b>		
RFGenerator:RFormat GSM900 E-GSM DCS1800 RFGenerator:RFormat?	Selection added	RFGenerator:RFormat GSM900 E-GSM DCS1800 PCS1900 RFGenerator:RFormat?
<b>SMONitor Subsystem</b>		
SMONitor:RFormat GSM900 E-GSM DCS1800 SMONitor:RFormat?	Selection added	SMONitor:RFormat GSM900 E-GSM DCS1800 PCS1900 SMONitor:RFormat?
<b>SYSTem Subsystem</b>		
	Softkey Memory	SYSTem:MEMory :AMPLitude <real 1>,<real 2> :AMPLitude?

Command Difference between E6392A & E6392B  
**Changed Commands**

	Softkey Memory	SYSTem:MEMory :CHANnel <int 1>,<int 2> :CHANnel?
	Softkey Memory	SYSTem:MEMory :PLEVel <int 1>,<int 2> :PLEVel?
<b>TESTs Subsystem for AUTOMATIC TEST</b>		
TESTs:AUTO:CONDition:LIMit :BER <real h> :BER?	TEST:AUTO to CONF	CONFIgure:CONDition:LIMit :BER <real h> :BER?
TESTs:AUTO:CONDition:LIMit :BTIMing <real 1>,<real h> :BTIMing?		CONFIgure:CONDition:LIMit :BTIMing <real 1>,<real h> :BTIMing?
TESTs:AUTO:CONDition:LIMit :CURRent:CAMP <int 1>,<int h> :CURRent:CAMP?		CONFIgure:CONDition:LIMit :CURRent:CAMP <int 1>,<int h> :CURRent:CAMP?
TESTs:AUTO:CONDition:LIMit :CURRent:TALK <int 1>,<int h> :CURRent:TALK?		CONFIgure:CONDition:LIMit :CURRent:TALK <int 1>,<int h> :CURRent:TALK?
TESTs:AUTO:CONDition:LIMit :FER <real h> :FER?		CONFIgure:CONDition:LIMit :FER <real h> :FER?
TESTs:AUTO:CONDition:LIMit :FREQuency <int 1>,<int h> :FREQuency?		CONFIgure:CONDition:LIMit :FREQuency <int 1>,<int h> :FREQuency?
TESTs:AUTO:CONDition:LIMit :LEVel <int 1>,<int h> :LEVel?		CONFIgure:CONDition:LIMit :LEVel <int 1>,<int h> :LEVel?
TESTs:AUTO:CONDition:LIMit :PHASe:PEAK <real h> :PHASe:PEAK?		CONFIgure:CONDition:LIMit :PHASe:PEAK <real h> :PHASe:PEAK?
TESTs:AUTO:CONDition:LIMit :PHASe:RMS <real h> :PHASe:RMS?		CONFIgure:CONDition:LIMit :PHASe:RMS <real h> :PHASe:RMS?
TESTs:AUTO:CONDition:LIMit :QUALity <int 1>,<int h> :QUALity?		CONFIgure:CONDition:LIMit :QUALity <int 1>,<int h> :QUALity?
TESTs:AUTO:CONDition:LIMit :TPower:HIGH <real 1>,<real h> :TPower:HIGH? :TPower:MEDium <real 1>,<real h> :TPower:MEDium? :TPower:LOW <real 1>,<real h> :TPower:LOW?	(PWR CNTL instead of ranges)	CONFIgure:CONDition:LIMit :TPower <int>,<real 1>,<real h> :TPower?  (<int> for PWR CNTL)

Command Difference between E6392A & E6392B  
Changed Commands

TESTs:AUTO:CONDition :PLEVel:HIGH <int> :PLEVel:HIGH? :PLEVel:MEDium <int> :PLEVel:MEDium? :PLEVel:LOW <int> :PLEVel:LOW?	(Addition to Manual Test)	CONFigure:CONDition :PLEVel:HIGH <int> :PLEVel:HIGH? :PLEVel:MEDium <int> :PLEVel:MEDium? :PLEVel:LOW <int> :PLEVel:LOW? :PLEVel:MANual <int> :PLEVel:MANual?
TESTs:AUTO:CONDition:RFormat GSM900 E-GSM DCS1800 TESTs:AUTO:CONDition:RFormat?	TEST:AUTO to CONF (Selection added)	CONFigure:CONDition:RFormat GSM900 E-GSM DCS1800 PCS1900 CONFigure:CONDition:RFormat?
TESTs:AUTO:CONDition :SENSitivity:FRANe <int> :SENSitivity:FRAME?		CONFigure:CONDition :SENSitivity:FRAME <real> :SENSitivity:FRAME?
TESTs:AUTO:CONDition :SENSitivity:LEVel <int> :SENSitivity:LEVel?		CONFigure:CONDition :SENSitivity:LEVel <real> :SENSitivity:LEVel?
TESTs:AUTO:RESults :BTIMing1? :BTIMing2? :BTIMing3?	3 to 6 results	TESTs:AUTO:RESults :BTIMing1? :BTIMing2? :BTIMing3? :BTIMing4? :BTIMing5? :BTIMing6?
TESTs:AUTO:RESults :CURRent1? :CURRent2? :CURRent3?		TESTs:AUTO:RESults :CURRent1? :CURRent2? :CURRent3? :CURRent4? :CURRent5? :CURRent6?
TESTs:AUTO:RESults :FREQuency1? :FREQuency2? :FREQuency3?		TESTs:AUTO:RESults :FREQuency1? :FREQuency2? :FREQuency3? :FREQuency4? :FREQuency5? :FREQuency6?
TESTs:AUTO:RESults :LEVel1? :LEVel2? :LEVel3?		TESTs:AUTO:RESults :LEVel1? :LEVel2? :LEVel3? :LEVel4? :LEVel5? :LEVel6?

B. Command Difference  
between E6392A & E6392B



## Command Difference between E6392A & E6392B

### Changed Commands

TESTs:AUTO:RESults :PHASel? :PHASe2? :PHASe3?	3 to 6 results	TESTs:AUTO:RESults :PHASel? :PHASe2? :PHASe3? :PHASe4? :PHASe5? :PHASe6?
TESTs:AUTO:RESults :PHASel:MARKer? :PHASe2:MARKer? :PHASe3:MARKer?		TESTs:AUTO:RESults :PHASel:MARKer? :PHASe2:MARKer? :PHASe3:MARKer? :PHASe4:MARKer? :PHASe5:MARKer? :PHASe6:MARKer?
TESTs:AUTO:RESults :PHASel:MARKer:POINT UP DOWN :PHASel:MARKer:POINT <real> :PHASel:MARKer:POINT? :PHASe2:MARKer:POINT UP DOWN :PHASe2:MARKer:POINT <real> :PHASe2:MARKer:POINT? :PHASe3:MARKer:POINT UP DOWN :PHASe3:MARKer:POINT <real> :PHASe3:MARKer:POINT?		TESTs:AUTO:RESults :PHASel:MARKer:POINT UP DOWN :PHASel:MARKer:POINT <real> :PHASel:MARKer:POINT? :PHASe2:MARKer:POINT UP DOWN :PHASe2:MARKer:POINT <real> :PHASe2:MARKer:POINT? :PHASe3:MARKer:POINT UP DOWN :PHASe3:MARKer:POINT <real> :PHASe3:MARKer:POINT? :PHASe4:MARKer:POINT UP DOWN :PHASe4:MARKer:POINT <real> :PHASe4:MARKer:POINT? :PHASe5:MARKer:POINT UP DOWN :PHASe5:MARKer:POINT <real> :PHASe5:MARKer:POINT? :PHASe6:MARKer:POINT UP DOWN :PHASe6:MARKer:POINT <real> :PHASe6:MARKer:POINT?
TESTs:AUTO:RESults :PHASel:ZOOM ON OFF 0 1 :PHASel:ZOOM? :PHASe2:ZOOM ON OFF 0 1 :PHASe2:ZOOM? :PHASe3:ZOOM ON OFF 0 1 :PHASe3:ZOOM?	[Deleted] Phase Error Graph Zoom	
TESTs:AUTO:RESults :QUALity1? :QUALity2? :QUALity3?	3 to 6 results	TESTs:AUTO:RESults :QUALity1? :QUALity2? :QUALity3? :QUALity4? :QUALity5? :QUALity6?

Command Difference between E6392A & E6392B  
Changed Commands

TESTs:AUTO:RESults :RAMP1? :RAMP2? :RAMP3?	3 to 6 results	TESTs:AUTO:RESults :RAMP1? :RAMP2? :RAMP3? :RAMP4? :RAMP5? :RAMP6?
TESTs:AUTO:RESults :RAMP1:MARKer? :RAMP2:MARKer? :RAMP3:MARKer?		TESTs:AUTO:RESults :RAMP1:MARKer? :RAMP2:MARKer? :RAMP3:MARKer? :RAMP4:MARKer? :RAMP5:MARKer? :RAMP6:MARKer?
TESTs:AUTO:RESults :RAMP1:MARKer:POINt UP DOWN :RAMP1:MARKer:POINt <real> :RAMP1:MARKer:POINt? :RAMP2:MARKer:POINt UP DOWN :RAMP2:MARKer:POINt <real> :RAMP2:MARKer:POINt? :RAMP3:MARKer:POINt UP DOWN :RAMP3:MARKer:POINt <real> :RAMP3:MARKer:POINt?		TESTs:AUTO:RESults :RAMP1:MARKer:POINt UP DOWN :RAMP1:MARKer:POINt <real> :RAMP1:MARKer:POINt? :RAMP2:MARKer:POINt UP DOWN :RAMP2:MARKer:POINt <real> :RAMP2:MARKer:POINt? :RAMP3:MARKer:POINt UP DOWN :RAMP3:MARKer:POINt <real> :RAMP3:MARKer:POINt? :RAMP4:MARKer:POINt UP DOWN :RAMP4:MARKer:POINt <real> :RAMP4:MARKer:POINt? :RAMP5:MARKer:POINt UP DOWN :RAMP5:MARKer:POINt <real> :RAMP5:MARKer:POINt? :RAMP6:MARKer:POINt UP DOWN :RAMP6:MARKer:POINt <real> :RAMP6:MARKer:POINt?
TESTs:AUTO:RESults :RAMP1:ZOOM ON OFF 1 0 :RAMP1:ZOOM? :RAMP2:ZOOM ON OFF 1 0 :RAMP2:ZOOM? :RAMP3:ZOOM ON OFF 1 0 :RAMP3:ZOOM?		TESTs:AUTO:RESults :RAMP1:ZOOM ON OFF 1 0 :RAMP1:ZOOM? :RAMP2:ZOOM ON OFF 1 0 :RAMP2:ZOOM? :RAMP3:ZOOM ON OFF 1 0 :RAMP3:ZOOM? :RAMP4:ZOOM ON OFF 1 0 :RAMP4:ZOOM? :RAMP5:ZOOM ON OFF 1 0 :RAMP5:ZOOM? :RAMP6:ZOOM ON OFF 1 0 :RAMP6:ZOOM?
TESTs:AUTO:RESults :SENSitivity1? :SENSitivity2? :SENSitivity3?		TESTs:AUTO:RESults :SENSitivity1? :SENSitivity2? :SENSitivity3? :SENSitivity4? :SENSitivity5? :SENSitivity6?

B. Command Difference  
between E6392A & E6392B

## Command Difference between E6392A & E6392B

### Changed Commands

TESTs:AUTO:RESults :TPOWer1? :TPOWer2? :TPOWer3?	3 to 6 results	TESTs:AUTO:RESults :TPOWer1? :TPOWer2? :TPOWer3? :TPOWer4? :TPOWer5? :TPOWer6?
TESTs:AUTO:RFormat GSM900 E-GSM DCS1800 TESTs:AUTO:RFORMat?	Selection added	TESTs:AUTO:RFormat GSM900 E-GSM DCS1800 PCS1900 TESTs:AUTO:RFORMat?
TESTs:AUTO:SEquence :BCCH <int> :BCCH?	TEST:AUTO to CONF (:BCCH to :BCCH:CHAN & :BCCH:FREQ)  (:TCH to :TCH:CHAN & :TCH:FREQ)	CONFigure:SEquence :BCCH:CHANnel <int> :BCCH:CHANnel?
		CONFigure:SEquence :BCCH:FREQuency <real> :BCCH:FREQuency?
TESTs:AUTO:SEquence :TCH <int> :TCH?		CONFigure:SEquence :TCH:CHANnel <int> :TCH:CHANnel?
		CONFigure:SEquence :TCH:FREQuency <real> :TCH:FREQuency?
TESTs:AUTO:SEquence:VARIable :DCP:VOLT1 <real> :DCP:VOLT1? :DCP:VOLT2 <real> :DCP:VOLT2? :DCP:VOLT3 <real> :DCP:VOLT3?	(3 to 6 variables)	CONFigure:SEquence:VARIable :DCP:VOLT1 <real> :DCP:VOLT1? :DCP:VOLT2 <real> :DCP:VOLT2? :DCP:VOLT3 <real> :DCP:VOLT3? :DCP:VOLT4 <real> :DCP:VOLT4? :DCP:VOLT5 <real> :DCP:VOLT5? :DCP:VOLT6 <real> :DCP:VOLT6?
TESTs:AUTO:SEquence:VARIable :TCH:CHANnel1 <int> :TCH:CHANnel1? :TCH:CHANnel2 <int> :TCH:CHANnel2? :TCH:CHANnel3 <int> :TCH:CHANnel3?		CONFigure:SEquence:VARIable :TCH:CHANnel1 <int> :TCH:CHANnel1? :TCH:CHANnel2 <int> :TCH:CHANnel2? :TCH:CHANnel3 <int> :TCH:CHANnel3? :TCH:CHANnel4 <int> :TCH:CHANnel4? :TCH:CHANnel5 <int> :TCH:CHANnel5? :TCH:CHANnel6 <int> :TCH:CHANnel6?
TESTs:AUTO:SRECall:DELeTe <string>	(:SREC to :FILE)	CONFigure:FILE:DELeTe <string>

Command Difference between E6392A & E6392B  
Changed Commands

TESTs:AUTO:SRECall:FORMat	(:SREC to :FILE)	CONFigure:FILE:FORMat
TESTs:AUTO:SRECall:LIST?		CONFigure:FILE:LIST?
TESTs:AUTO:SRECall:RECall <string>		CONFigure:FILE:RECall <string>
TESTs:AUTO:SRECall:SAVE <string 1>,<string 2>		CONFigure:FILE:SAVE <string 1>,<string 2>
TESTs:AUTO:VARiable :DCP:VOLT1 <real> :DCP:VOLT1? :DCP:VOLT2 <real> :DCP:VOLT2? :DCP:VOLT3 <real> :DCP:VOLT3?	3 to 6 variables	TESTs:AUTO:VARiable :DCP:VOLT1 <real> :DCP:VOLT1? :DCP:VOLT2 <real> :DCP:VOLT2? :DCP:VOLT3 <real> :DCP:VOLT3? :DCP:VOLT4 <real> :DCP:VOLT4? :DCP:VOLT5 <real> :DCP:VOLT5? :DCP:VOLT6 <real> :DCP:VOLT6?
TESTs:AUTO:VARiable :TCH:CHANnel1 <int> :TCH:CHANnel1? :TCH:CHANnel2 <int> :TCH:CHANnel2? :TCH:CHANnel3 <int> :TCH:CHANnel3?		TESTs:AUTO:VARiable :TCH:CHANnel1 <int> :TCH:CHANnel1? :TCH:CHANnel2 <int> :TCH:CHANnel2? :TCH:CHANnel3 <int> :TCH:CHANnel3? :TCH:CHANnel4 <int> :TCH:CHANnel4? :TCH:CHANnel5 <int> :TCH:CHANnel5? :TCH:CHANnel6 <int> :TCH:CHANnel6?
	All Tests Results (Detail)	TESTs:AUTO:RESults:WHOLe?
	Multi Band	TESTs:AUTO:MBAND OFF DCS1800 [RFOR=GSM900/E-GSM] TESTs:AUTO:MBAND OFF GSM900 E-GSM [RFOR=DCS1800] TESTs:AUTO:MBAND?
	Screen Mode	TESTs:AUTO:SCReen SIMPLified DETAiled
<b>TESTs Subsystem for MANUAL TEST</b>		
TESTs:MANual:CONDition :AMPLitude <int> :AMPLitude?	TEST:MAN to CONF	CONFigure:CONDition :AMPLitude <real> :AMPLitude?
TESTs:MANual:CONDition :AVERage OFF <int> :AVERage?		CONFigure:CONDition :AVERage OFF <int> :AVERage?

## Command Difference between E6392A & E6392B

### Changed Commands

TESTs:MANual:CONDition :LDElay SHORT MID LONG :LDElay?	TEST:MAN to CONF  (Selection added)	CONFigure:CONDition :LDElay SHORT MID LONG :LDElay?
TESTs:MANual:CONDition:LIMit :BER <real h> :BER?		CONFigure:CONDition:LIMit :BER <real h> :BER?
TESTs:MANual:CONDition:LIMit :BTIMing <real l>,<real h> :BTIMing?		CONFigure:CONDition:LIMit :BTIMing <real l>,<real h> :BTIMing?
TESTs:MANual:CONDition:LIMit :CURRent:CAMP <int l>,<int h> :CURRent:CAMP?		CONFigure:CONDition:LIMit :CURRent:CAMP <int l>,<int h> :CURRent:CAMP?
TESTs:MANual:CONDition:LIMit :CURRent:TALK <int l>,<int h> :CURRent:TALK?		CONFigure:CONDition:LIMit :CURRent:TALK <int l>,<int h> :CURRent:TALK?
TESTs:MANual:CONDition:LIMit :FER <real h> :FER?		CONFigure:CONDition:LIMit :FER <real h> :FER?
TESTs:MANual:CONDition:LIMit :FREQuency <int l>,<int h> :FREQuency?		CONFigure:CONDition:LIMit :FREQuency <int l>,<int h> :FREQuency?
TESTs:MANual:CONDition:LIMit :LEVel <int l>,<int h> :LEVel?		CONFigure:CONDition:LIMit :LEVel <int l>,<int h> :LEVel?
TESTs:MANual:CONDition:LIMit :PHASe:PEAK <real h> :PHASe:PEAK?		CONFigure:CONDition:LIMit :PHASe:PEAK <real h> :PHASe:PEAK?
TESTs:MANual:CONDition:LIMit :PHASe:RMS <real h> :PHASe:RMS?		CONFigure:CONDition:LIMit :PHASe:RMS <real h> :PHASe:RMS?
TESTs:MANual:CONDition:LIMit :QUALity <int l>,<int h> :QUALity?		CONFigure:CONDition:LIMit :QUALity <int l>,<int h> :QUALity?
TESTs:MANual:CONDition:LIMit :TPower <int>,<real l>,<real h> :TPower?		CONFigure:CONDition:LIMit :TPower <int>,<real l>,<real h> :TPower?
TESTs:MANual:CONDition :PCLass <int> :PCLass?		CONFigure:CONDition :PCLass <int> :PCLass?
TESTs:MANual:CONDition:RFormat GSM900 E-GSM DCS1800 TESTs:MANual:CONDition:RFormat?		CONFigure:CONDition:RFormat GSM900 E-GSM DCS1800 PCS1900 CONFigure:CONDition:RFormat?
TESTs:MANual:CONDition :RFOUtpuT AUTO ON :RFOUtpuT?		CONFigure:CONDition :RFOUtpuT AUTO ON :RFOUtpuT?

Command Difference between E6392A & E6392B  
Changed Commands

TESTs:MANual:CONDition :SENSitivity:FRAMe <int> :SENSitivity:FRAMe?	(Selection added)	CONFigure:CONDition :SENSitivity:FRAMe <int> :SENSitivity:FRAMe?
TESTs:MANual:CONDition :SENSitivity:LEVel <int> :SENSitivity:LEVel?		CONFigure:CONDition :SENSitivity:LEVel <real> :SENSitivity:LEVel?
TESTs:MANual:CURRent :DCPower:MODE ON OFF 1 0 :DCPower:MODE?	[Deleted] DC Power Mode	
TESTs:MANual:CURRent:RESults?	Sync DC Current Measurement	TESTs:MANual:CURRent :RESults:CAMP? :RESults:TALK?
	Async DC Current Measurement	TESTs:MANual:CURRent:RESults?
	GPRS DC Current Measurement	TESTs:MANual:CURRent:RESults?
TESTs:MANual:MEASure :DCPower:MODE ON OFF 1 0 :DCPower:MODE?	[Deleted] DC Power Mode	
TESTs:MANual:PHASe :DCPower:MODE ON OFF 1 0 :DCPower:MODE?	[Deleted] DC Power Mode	
TESTs:MANual:SENSitivity :DCPower:MODE ON OFF 1 0 :DCPower:MODE?	[Deleted] DC Power Mode	
TESTs:MANual:SMONitor :DCPower:MODE ON OFF 1 0 :DCPower:MODE?	[Deleted] DC Power Mode	
TESTs:MANual:SRECall:DELeTe <string>	TEST:MAN to CONF  (:SREC to :FILE)	CONFigure:FILE:DELeTe <string>
TESTs:MANual:SRECall:FORMat		CONFigure:FILE:FORMat
TESTs:MANual:SRECall:LIST?		CONFigure:FILE:LIST?
TESTs:MANual:SRECall:RECall <string>		CONFigure:FILE:RECall <string>
TESTs:MANual:SRECall:SAVE <string 1>,<string 2>		CONFigure:FILE:SAVE <string 1>,<string 2>
TESTs:MANual:TPOWer :DCPower:MODE ON OFF 1 0 :DCPower:MODE?	[Deleted] DC Power Mode	
TESTs:MANual:TXFRequency :RESults:ZOOM ON OFF 0 1 :RESults:ZOOM?	[Deleted] Phase Error Graph Zoom	

B. Command Difference  
between E6392A & E6392B

Command Difference between E6392A & E6392B  
**Changed Commands**

	Network Configuration: Multiframes	CONFigure:NETWork:BSPa <int> CONFigure:NETWrok:BSPa?
	Multi Band	TESTs:MANual:MBAND OFF DCS1800 [RFOR=GSM900/E-GSM] TESTs:MANual:MBAND OFF GSM900 E-GSM [RFOR=DCS1800] TESTs:MANual:MBAND?
	Stand-by Screen (Amplitude)	TESTs:MANual:AMPLitude <real> TESTs:MANual:AMPLitude?
	(Midamble Selection)	TESTs:MANual:MIDamble NONE TSC0  TSC1 TSC2 TSC3 TSC4 TSC5 TSC6  TSC7 TESTs:MANual:MIDamble?
	(Timing Advance)	TESTs:MANual:TADVance <int> TESTs:MANual:TADVance?
	(Slot Configuration)	TESTs:MANual:SCONfigure 1x1 2x1
	Measuring Screen: (BS Level)	TESTs:MANual:MEASure:AMPLitude <real> TESTs:MANual:MEASure:AMPLitude?
	(GPRS End)	TESTs:MANual:MEASure:END
	(Timing Advance)	TESTs:MANual:MEASure:TADVance <int> TESTs:MANual:MEASure:TADVance?
	(Slot Configuration)	TESTs:MANual:MEASure:SCONfigure 1x1 2x1
	Peak TX Power/ Burst Timing/ Power Ramp Measurement Screen	TESTs:MANual:TPOWER:AMPLitude <real> TESTs:MANual:TPOWER:AMPLitude?  TESTs:MANual:TPOWER:TADVance <int> TESTs:MANual:TPOWER:TADVance?  TESTs:MANual:TXAMplitude :ACTADVance?
	Phase/ Frequency Error Measurement Screen	TESTs:MANual:PHASE:AMPLitude <real> TESTs:MANual:PHASE:AMPLitude?  TESTs:MANual:PHASE:TADVance <int> TESTs:MANual:PHASE:TADVance?
	Spectrum Monitor Measurement Screen	TESTs:MANual:SMONitor:AMPLitude <real> TESTs:MANual:SMONitor:AMPLitude?

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